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Parathyroid Tumors

Intermittent Function, a Pitfall in Diagnosis

RALPH J. VEENEMA, M.D., New York

AS UROLOGISTS are frequently faced with the problem of recurrent renal calculi and the differential diagnosis in instances of hypercalcemia and hypercalciuria, it is natural for them to have an unusual interest in the problem of functioning parathyroid tumors. A careful study of the problem of these tumors impresses one immediately with the difficulties of diagnosis.

The clinical symptoms and signs of hyperparathyroidism vary greatly and affect many systems. Although renal and skeletal symptoms are most common, many patients also have gastrointestinal and neuromuscular symptoms. In the 70 cases of functioning parathyroid tumor reviewed in this study at Columbia-Presbyterian Medical Center from 1932 through 1959, there were five patients who were initially admitted to the Neurological Institute for investigation of headache and neuromuscular weakness and were subsequently found to have hyperparathyroidism. Three patients had symptoms primarily referable to duodenal ulcers.

In general, the symptomatology can be classed as (1) *nonspecific symptoms*, such as weakness, easy fatigability, irritability, weight loss and epigastric distress; (2) *symptoms referable to the kidneys*; (3) *symptoms referable to the skeleton*, such as bone pain, pathological fractures and deformities.

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Guest Speaker's Address: Presented before the Third General Meeting at the 90th Annual Session of the California Medical Association, Los Angeles, April 30 to May 3, 1961.

• Seventy cases of functioning parathyroid tumors encountered at Columbia-Presbyterian Medical Center were reviewed. The clinical and chemical findings in parathyroid tumors were variable and were suggestive of intermittent function. The indirect diagnostic tests available today usually paralleled the basic serum calcium and phosphorus determinations. Urolithiasis was the most common complication observed, but the symptoms of it varied from simple colic and single calculus problem to extensive calculus disease. There were two instances of hyperparathyroid crisis or "hypercalcemic poisoning."

The symptomatology seems to follow no apparent sequential pattern—that is, renal involvement often precedes skeletal lesions and vice versa.

It is thus evident that symptomatology cannot be entirely reliable. Direct assay of parathormone is not a clinically applicable test as yet. It would be most helpful if such a direct assay were available, but we must rely on indirect chemical tests for diagnosis. The actual mechanism of action of the parathyroid hormone is still a subject of much study, but in general it can be stated that the chemical tests that are useful today are based on the two following actions of the hormone: (1) The mobilization of calcium from the skeleton, (2) the inhibition of reabsorption of filtered phosphate by the renal tubules, or so-called phosphate diuresis.

These indirect chemical tests such as the intravenous calcium loading test,⁵ 24-hour urinary cal-

cium determination, phosphate clearance, tubular reabsorption of phosphate^{3,8} and the basic serum calcium and phosphorus determinations, are helpful, but no single test is absolutely diagnostic. The chemical diagnosis is also limited by the fact that the reliability of these tests is dependent upon normal renal function and normal serum protein. All too often the results of the more complicated tests are equivocal and borderline whenever the serum calcium and phosphorus are also equivocal and borderline. Another limiting factor in the chemical diagnostic tests is an apparent intermittent function of the parathyroid tumor.

A careful study of the cases of functioning parathyroid tumor observed at the Columbia-Presbyterian Medical Center reemphasized the variability of the chemical findings, the lack of characteristic general clinical features and the lack of characteristic urological symptoms and findings. The study also emphasized the possibility of occurrence of hyperparathyroid crisis or "hypercalcemic poisoning." A need was evident for earlier surgical exploration and more liberalized criteria for surgical exploration to avoid the potentially fatal outcome of hyperparathyroidism.

CLINICAL FEATURES

From 1932 through 1959, 70 patients with functioning parathyroid tumor were observed at the Columbia-Presbyterian Medical Center (Table 1). Adenomas predominated in this series and in two patients recurrent adenomas were found. There were three carcinomas of the parathyroid gland removed. Two of these were functioning carcinomas, and in one instance a metastatic lesion from the tumor was functioning. The three patients with carcinoma died, two, three and six years after diagnosis, despite radical neck dissection and radiotherapy. Cases of hyperplasia of the parathyroids were excluded from this study.

Female patients predominated in a ratio of three to two and the incidence was highest in the 30 to 60 year old group. The youngest patient was age 11 and the oldest 76 years.

Urolithiasis was a clinical feature in 50 of the 70 patients with functioning tumors. One of the patients with functioning carcinoma had renal calculi and one did not. The time interval from diagnosis of calculus disease to removal of parathyroid tumor was as little as two weeks and as long as 18 years. The average was 5.6 years.

There was no identifiable uniformity of clinical features that could be considered characteristic of cases in which there was a calculus problem. Multiple and bilateral calculi, as expected, were common. All calculi were opaque, but of varying degrees

TABLE 1.—Data on Cases of Parathyroid Tumors Observed at Columbia-Presbyterian Medical Center (1932 Through 1959)

Functioning tumors:	
Adenomas	70*
Carcinomas	2
Non-functioning tumors:	
Adenomas	6
Carcinomas	1

*Includes two recurrent adenomas.

TABLE 2.—Clinical Features of Urolithiasis in 50 Patients with Functioning Parathyroid Tumors

	No. Patients
Recurrent calculi	25
Bilateral calculi	29
Opaque calculi	50
Single calculus	7
Multiple calculi	33*
Nephrocalcinosis	10

*Staghorn calculi in five patients.

TABLE 3.—Operations for Urolithiasis in 50 Patients with Functioning Parathyroid Tumors

	No. Patients
Number of operations:	
None	19
Single	17
Multiple	14
Types of operations:	
Ureterolithotomy	20
Pyelolithotomy	10
Nephrolithotomy	8
Nephrectomy	9
Cystoscopic extraction	2
Cystolithotomy	2

of opacity. Typical nephrocalcinosis was present in only ten patients and in seven patients only a single calculus was present. Staghorn calculi were present in five of the 50 patients with calculi. In general one can state that the urolithiasis varied from simple colic and single stone to extensive calculus disease. (See Table 2.)

Most of the stones were of mixed chemical make-up, but calcium phosphate was common to all the mixed stones, and five of the eight pure stones in the series were calcium phosphate. Two of the other three pure stones were calcium oxalate stones and one was made up solely of uric acid. The patient with the uric acid stone also had gout and it is questionable what relationship the parathyroid tumor played in the calculus disease.

A total of 51 urological operations were performed on 31 of the 50 patients with urolithiasis. In 19 patients with calculus disease and functioning parathyroid tumors, no urological operation was indicated. The multiplicity of operations reemphasizes the magnitude of the calculus problem frequently encountered in patients with a functioning parathyroid tumor. (See Table 3.)

After removal of the parathyroid tumor, 17 patients had no further calculi, and in one patient calcification of the kidney seemed to decrease. Results, however, were not always good. Poor results were mainly due to persistent stones, chronic urinary infection and renal insufficiency. There were nine deaths due to renal insufficiency. In these nine patients an average of 6.2 years elapsed from the time of diagnosis of renal calculi to the date of removal of the parathyroid adenoma, and the postoperative survival averaged 7.4 years.

HYPERPARATHYROID CRISIS OR "HYPERCALCEMIC POISONING"

An extremely interesting clinical entity encountered in this series of seventy functioning parathyroid tumors was hyperparathyroid crisis. There were two such cases. One patient was a 56-year-old woman who died following ureterolithotomy. She was admitted with a ureteral calculus obstructing a solitary kidney. Initial hypercalcemia was noted and parathyroid adenoma suspected, but the pressing urological problem took priority. Seven days after ureterolithotomy the patient became lethargic, which was followed by high fever, oliguria, circulatory collapse, cyanosis and coma. In spite of supportive therapy she died on the tenth postoperative day, at which time serum calcium was 19.4 mg. per 100 cc. At autopsy a parathyroid adenoma with focal necrosis was found. The cause of death was considered to be the toxicity of hypercalcemia plus bacteremia.

A second case of hyperparathyroid crisis was that of a 70-year-old white man with multiple bilateral renal calculi and preoperative serum calcium of 12.5 mg. per 100 cc. A parathyroid tumor was removed from his neck on June 25, 1952. Postoperatively the serum calcium rose, from levels of 12.5 and 14.6 preoperatively, to 17.0 and 18.0 mg. per 100 cc. postoperatively. Oliguria and renal failure developed and the patient died in what seemed to be uremia. At autopsy a 4 cm. tumor was found below the clavicle. It appears that this tumor continued to function and led to death.

The entity of hyperparathyroid crisis is fortunately rare, but its gravity is not sufficiently appreciated. James and Richards⁶ reported a case of hyperparathyroid crisis which was successfully treated by doing an emergency parathyroidectomy. It is reassuring to know that emergency parathyroidectomy can be done if one is faced with this fatal problem. It is apparent that it is potentially dangerous to do a urological procedure in the presence of evidence of hyperparathyroidism. Surgical stress and immobilization seem to be sufficient to precipitate the onset of a hyperparathyroid crisis.

The use of supportive therapy with steroids and the use of a chelating agent, such as EDTA would also be helpful today. An entity such as hyperparathyroid crisis further indicates that there is variation in the action of parathyroid tumors.

CHEMICAL ASPECTS OF FUNCTIONING PARATHYROID TUMORS

Two of the greatest pitfalls in the diagnosis of parathyroid tumors are that the chemical diagnostic tests depend upon normal renal function and apparent chemical indications of intermittent function of parathyroid tumors. Since variable serum calcium and phosphorus levels are rather commonly found, making these tests untrustworthy, we have also pursued other chemical diagnostic tests, as noted previously.

Our experiences with the tubular reabsorption of phosphate test done in the last two and a half years on 60 patients with calculus formation showed 35 results within normal range, 13 borderline low and 12 distinctly low. In five of the 12 with low reabsorption, parathyroid adenomas were found at operation. Parathyroid hyperplasia was present in another patient, and parathyroid cyst in yet another. The remaining five patients were not operated upon. As a rule the results of other chemical tests paralleled those of the tubular reabsorption of phosphate test.

It has sometimes been stated that a skeletal survey is unnecessary if alkaline phosphatase is within normal range. This is not necessarily so. In eight of 70 patients with functioning parathyroid tumors, varying degrees of skeletal changes in demineralization were observed, which aided in the diagnosis of hyperparathyroidism, although serum alkaline phosphatase values showed no abnormality. Three of these patients had typical osteitis fibrosa cystica, and in one of these three the bone changes were so extensive that "osteoblastic exhaustion" was the explanation given for the repeatedly normal serum alkaline phosphatase.

Repeated determinations of serum calcium and serum phosphorus levels remain the most practical tests. In the present series of 70 patients with functioning parathyroid tumors the highest serum calcium levels in individual patients (Chart 1) were from 20.3 mg. per 100 cc. down to 10.6 mg. per 100 cc. In three of the patients the serum calcium levels never rose above 11.2 mg. per 100 cc. In one patient the serum calcium value varied from 9.8 mg. to 11.0 mg. per 100 cc. within a one-month period. In the same period the patient had serum phosphorus varying from 2.2 to 3.2 mg. per 100 cc. and the diagnosis was made on the basis of negative calcium balance studies and skeletal lesions. Several observers have emphasized that elevated serum cal-

SERUM CALCIUM AND PHOSPHORUS VALUES IN 70 PATIENTS WITH FUNCTIONING PARATHYROID TUMORS (PRIOR TO REMOVAL OF TUMOR)

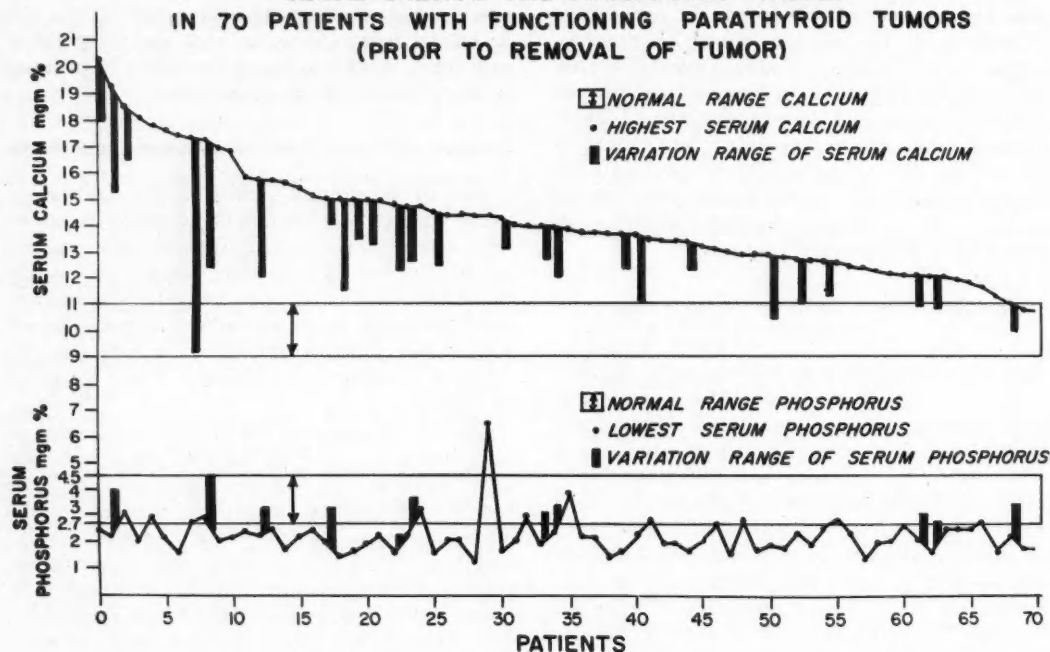


Chart 1.—The upper part of this chart lists the highest serum calcium values for the 70 individual patients with functioning parathyroid tumors and the lower part lists their lowest serum phosphorus levels. (Normal calcium content is 9 to 11 mg. per 100 cc. and normal for phosphorus 2.7 to 4.5 mg. per 100 cc.) Hypophosphatemia was not a consistent finding. Highest serum calcium levels were from 20.3 per 100 cc. down to 10.6 mg. per 100 cc. In three patients serum calcium levels never rose above 11.2 mg. per 100 cc. In five other patients serum calcium was recorded within a normal range during the time they were observed.

The solid bars indicate patients who showed a significant range of variation of chemical values and also the extent of that variation. In 25 patients the serum calcium range of variation seemed to be significant—that is, a rise or fall of greater than 1 mg. per 100 cc. In 11 of these 25 there was also a significant range of variation of the serum phosphorus, a rise or fall greater than 0.6 mg. per 100 cc.

cium is not an entirely necessary criterion for diagnosis of hyperparathyroidism.^{1,2,9}

In 47 of the 70 patients with functioning parathyroid tumors, the serum calcium values showed some degree of variation. In 25 of these 47 the range of variation of serum calcium seemed to be significant—that is, beyond the accepted laboratory error for calcium (rise or fall of greater than 1 mg. per 100 cc.). Eleven of the 25 also showed a significant variation in serum phosphorus (rise or fall of more than 0.6 mg. per 100 cc.). In nine of these eleven, the serum phosphorus sometimes rose to within normal limits. Renal insufficiency, hypoproteinemia or dietary changes did not appear to be factors in these 25 cases, and all values, of course, were before excision of the parathyroid tumors. Significant ranges of variation of serum calcium and phosphorus values were encountered at as little as two-day intervals and as long as two-year intervals. Values both increased and decreased. In five patients the range of variation was from hypercalcemic levels sometimes, down to normal (9 to 11

mg. per 100 cc.) calcium levels. In one patient the serum calcium rose within a four-month period from 9.2 mg. to 17.4 mg. per 100 cc. The serum phosphorus value in this patient varied only from 2.8 mg. to 3.2 mg. per 100 cc.

These variations in the serum calcium and phosphorus values are highly suggestive of intermittent function of the parathyroid tumor. The possibility of finding a parathyroid adenoma even in the presence of normal chemical values also emphasizes the difficulty in making the diagnosis. A provocative test is needed to assure the maximum function of the tumor at the time chemical tests are being done. Also, as noted previously, a method for direct assay of the parathormone would be extremely helpful.

DISCUSSION

Although intermittent function of parathyroid tumors has been previously noted,^{9,10} it has seldom been emphasized. The evidence for intermittent function of parathyroid tumors as seen in this study

can be classed as both clinical and chemical. There are several clinical indications: (1) The occurrence of both functioning and nonfunctioning adenomas and functioning and nonfunctioning carcinomas. (2) Instances of hyperparathyroid crisis or "hypercalcemic poisoning" indicate varying degrees of activities of the tumors. (3) In cases in which the patient is normal for a time after operation and then has "recurrent" adenoma, it is possible the lesion actually is a quiescent adenoma previously overlooked at the initial operation. This of course is speculative, but is another possibility for consideration in explanation of intermittent function. (4) A study of the pathologic features of parathyroid tumors done at Columbia-Presbyterian Medical Center by Kleinfeld⁷ showed no correlation between the size of tumors and the duration of symptoms. With larger tumors usually the serum calcium content is higher, but at times it may be very high with small tumors also.⁴ This suggests differences in growth rates and differences in tumor activity. (5) Intermittent activity is characteristic of other endocrine tumors such as pheochromocytoma and islet cell tumors of the pancreas and should certainly be also characteristic of parathyroid tumors.

This clinical evidence of intermittent function is further substantiated by the previously discussed variations in chemical values (Chart 1). Perhaps a greater appreciation of the quiescent phase of parathyroid tumors will enable us to detect more parathyroid tumors by doing repeated serum calcium and serum phosphorus determinations.

Without more direct methods of evaluating patients for hyperparathyroidism, repeated serum calcium and phosphorus determinations on three

successive days or three times per week at three to four-month intervals are recommended in all patients with opaque calculus or whenever hyperparathyroidism is suspected. In view of the limitations of diagnostic tests today a more liberal attitude toward surgical exploration for parathyroid tumors is recommended to avoid the irreversible renal damage and inevitable fatal outcome if the tumor is not removed.

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Supracondylar Amputation in the Aged

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AMPUTATIONS of the lower extremity have been done for centuries to remove members with severe injury, infection or malignant growths. The ever-increasing life span in recent decades has brought with it more elderly patients with occlusive vascular disease, making this the major indication for supracondylar amputation.

Although many patients with segmental arterial disease are being spared amputation by vascular replacements, by-pass grafts and end-arterectomy, the majority of the patients seen in the San Diego County General Hospital with arterial disease have far-advanced diffuse arteriosclerosis, precluding direct arterial operation.

Supracondylar amputation done on geriatric patients, who frequently have impairment of multiple systems, results in many problems not ordinarily found in younger patients and usually destines them to a wheelchair existence.

MATERIAL

The results of 105 consecutive supracondylar amputations done at the San Diego County General Hospital during the five-year period 1953 to 1958 were reviewed. Ninety-eight of the patients were treated on the general surgical service, and seven patients with severe trauma of the lower extremity were assigned to the orthopedic service on admission. Eighty-eight (83.8 per cent) of the 105 patients were beyond 60 years of age and form the basis of this study.

Each patient was evaluated by history, physical examination and laboratory tests to determine the cardiac, pulmonary and renal reserves as well as the nutritional and metabolic status. Aortograms, peripheral arteriograms, lumbar sympathetic blocks, selective spinal anesthesia, skin temperature determinations and plethysmographic examinations were done in selected cases. Most of the patients had far-advanced arterial disease with gangrene, and in these patients the tests to determine the vascular status were of only limited usefulness, principally confirming the clinical suspicion of need for amputation.

From the Department of Surgery, San Diego County General Hospital, San Diego 3.

Presented before the Southern California Chapter of the American College of Surgeons Meeting, Santa Barbara, January 15, 1960.

Submitted May 29, 1961.

• Of 105 consecutive supracondylar amputations done at the San Diego County General Hospital during the five-year period, 1953-58, 88 were in patients more than 60 years of age. Occlusive arterial disease was the reason for operation in 85 of the 88 cases.

Presenting complaints at the time of amputation were gangrene in 45 cases, pre-gangrene associated with severe pain in 34. Acute arterial occlusion as a cause of thigh amputation was infrequent.

The average age of patients requiring thigh amputation from complications of arteriosclerosis obliterans was 78.3 years; for those with diabetic arteriosclerosis or embolism it was about seven and a half years less.

Supracondylar amputation was considered the procedure of choice in the elderly debilitated patients with far-advanced occlusive diffuse arteriosclerosis, complicated by gangrene, ulcer and infection of the toes or feet. Sympathectomy and direct arterial operation if done early in the course of the disease may postpone or prevent subsequent amputation.

The surgical mortality rate (first two weeks) for supracondylar amputation was 12.5 per cent. More than two-thirds of the deaths were due to bronchopneumonia.

In Table 1 are summarized the major complaints referable to the disease leading to amputation. Gangrene, pain and ulcer in a lower extremity were the most common complaints. Other symptoms and signs recorded were cyanosis, cold extremity, claudication, swelling, redness, fracture and numbness.

Primary vascular disease was the reason for amputation in 85 of the 88 patients past 60 years of age; in two cases it was malignant disease and in one, trauma. Of the patients older than 60 years with vascular disease (Table 2), nearly two-thirds had arteriosclerosis obliterans while approximately one-third had diabetic arteriosclerosis. There were four cases of embolism to the femoral artery. Aneurysm resulted in subsequent amputation in three cases;

TABLE 1.—Presenting Complaint Referable to Disease Leading to Amputation in 88 Cases

Presenting Complaint	No. Cases
Gangrene	45
Pain	34
Ulcer	20
Cyanosis	8
Cold extremity	7
Claudication	6
Swelling	5

TABLE 2.—*Nature of Vascular Disease Leading to Amputation*

	Patients
Arteriosclerosis obliterans	49
Diabetic arteriosclerosis	27
Embolism	4
Aneurysm	3

TABLE 3.—*Relation of Kind of Vascular Disease to Age*

Disease	Average Age (Years)
Arteriosclerotic obliterans	78.3
Diabetic arteriosclerosis	70.8
Embolism	70.6
Aneurysm	60.5

TABLE 4.—*Data on Sex and Age of Patients Requiring Supracondylar Amputation*

	No. of Patients	Age Range (Years)	Average Age (Years)
Male	68	24-96	71.7
Female	37	25-100	72.9

two patients had aortic aneurysms and one had a femoral artery aneurysm.

The average age of the patients with arteriosclerosis obliterans was 78.3 years (Table 3), while the average for those with diabetic arteriosclerosis and for those with embolism was more than 7 years younger. Not included in the study are two patients with thromboangiitis obliterans who were 46 years and 54 years old at time of leg amputation. Table 4 shows that males outnumbered females nearly 2:1 in conditions requiring supracondylar amputation. However, the age distribution and average ages were nearly equal.

SURGICAL TECHNIQUE

Lumbar sympathectomy was performed before amputation on six patients in this series.

Luke and Pässler^{2,3} expressed the opinion that selecting the optimum site for lower extremity amputation usually can be determined correctly preoperatively by careful examination supplemented by an investigative program. Although we have found this approach to be helpful, the only dependable finding in our experience is the blood supply as noted at the time of operation.

Since the elderly patients seen in our institution are poor surgical risks, the least traumatic operation requiring the shortest operating time is considered the procedure of choice. Unilateral spinal anesthesia, with a minimum of premedication, is the anesthetic method preferred. No tourniquet is applied at the time of operation.

The skin incision is made to allow equal short anterior and posterior skin flaps. The fascia is

incised near the skin incision level. Muscles are cut at a higher level to permit a conical stump. Blood vessels are ligated with absorbable suture material, and major nerves are cut sharply and allowed to retract. The femur is divided several centimeters proximal to the adductor tubercle, allowing a loose approximation of the muscles, fascia and skin. The wound is liberally washed with 500 to 1,000 cc. of normal saline solution, and hemostasis then is carefully carried out. If hemostasis appears inadequate after considerable effort, placing a drain in the wound is indicated. The skin edges are approximated with steel wire, and pressure dressings are applied, beginning at the groin and progressing toward the end of the stump to support the skin flaps. The initial dressing change is delayed for two to three weeks unless otherwise indicated. If a drain has been used, it is removed on the third or fourth postoperative day without disturbing the main dressing. Sutures are removed two to three weeks after operation.

COMPLICATIONS

Wound infection developed in six cases. Cultures of the material that drained from the wound in those cases grew primarily hemolytic *Staphylococcus aureus*. The infected wounds healed readily when treated with local irrigation, frequent dressing changes and systemic use of antibiotics. A split-thickness skin graft was required in one instance when a stump wound did not heal primarily. Several patients with postoperative atelectasis and pneumonia responded well to therapy, as will be discussed later.

REHABILITATION

More than 90 per cent of the patients were in the hospital 20 days or more. The average number of days in the hospital was 55.0, ranging from 6 to 414 days. One-fourth of the patients over 60 years of age were able to use parallel bars, walkers or crutches before leaving the hospital; however, none could use an artificial leg. Follow-up observations of many of these patients in a nearby nursing home revealed that very little progress in rehabilitation was made after they left the hospital. Attempts by our elderly patients to use prosthetic devices for ambulation met with nearly universal failure.

POSTOPERATIVE DEATHS

Sixteen of the 88 patients past 60 years of age died in the hospital. Eleven of the 16 deaths occurred in the first two weeks following operation (Table 5), eight of them in the first four days, making the operative mortality 12.5 per cent. Bron-

TABLE 5.—Data on Time of Death of 16 Patients in a Series of 88 Over 60 Years of Age Who Died After Supracondylar Amputation

Time After Amputation	No. of Deaths	Mortality Rate (Per Cent)
First Week	9	10.2
First two weeks.....	11	12.5
First month	14	15.9
Overall.....	16	18.2

TABLE 6.—Cause of Postoperative Deaths

Day	Cause of Death	Age	Disease*
First week:			
1	Myocardial failure	72	Embolism
1	Bronchopneumonia	83	Embolism
2	Bronchopneumonia	80	D-AS
2	Bronchopneumonia	79	ASO
3	Myocardial infarction	82	ASO
3	Shock (hemorrhage)	84	Aneurysm
3	Bronchopneumonia	96	ASO
4	Bronchopneumonia	74	ASO
7	Bronchopneumonia	75	ASO
After first week:			
8	Bronchopneumonia	86	ASO
10	Bronchopneumonia	85	D-AS
21	Bronchopneumonia	80	ASO
22	Shock (hemorrhage)	81	ASO
23	Peritonitis	93	ASO
46	Bronchopneumonia	84	ASO
75	Bronchopneumonia	81	ASO

*D-AS=Diabetic arteriosclerosis. ASO=Arteriosclerosis obliterans.

chopneumonia was the major cause of death (Table 6). Two of the four patients who required amputations as a result of embolism to the femoral artery died on the first postoperative day. One patient died of myocardial infarction; and another patient, in whom a vascular graft was done and then a supracondylar amputation, died of irreversible shock due to a leaking abdominal aortic aneurysm. Two patients with diabetic arteriosclerosis died of bronchopneumonia, one on the second, and one on the tenth postoperative day. Shock from a bleeding gastric ulcer was the cause of death of one elderly patient. A 93-year-old woman with arteriosclerosis obliterans died of peritonitis six days after laparotomy for a ruptured appendix, which occurred 17 days after amputation.

DISCUSSION

Most of the elderly patients in the series had far-advanced vascular disease affecting multiple systems. Many of them had pronounced mental impairment as well as cardiac, renal and pulmonary disease. Before 1953, attempts were made to do more limited amputations in patients of this type but the high incidence of failure discouraged this course of action. Certainly, no patient should be subjected to supracondylar amputation if there is

any reasonable hope of preventing amputation or of succeeding with a more limited procedure. Lumbar sympathectomy, if done early in the course of occlusive arterial disease, will improve the circulation to the lower extremities and may postpone or even prevent the necessity for amputation. Direct vascular operation, when feasible, is obviously preferable to amputation.

Preoperative preparation should include efforts to improve nutrition, hemoglobin value and serum protein levels. Decreased cardiorespiratory and renal reserves should be recognized preoperatively and respected during and after operation. Good hemostasis and loose approximation of tissue are necessary for primary wound healing. The line of incision, which is located across the central portion of the end of the stump at the completion of operation, usually is found to have migrated posteriorly three weeks later when the initial dressing is removed. The delay in dressing changes and suture removal is important in avoiding wound complications in situations characterized by compromised circulation. The wounds that become infected usually heal readily when treated with local irrigation and systemic administration of antibiotics if there is an adequate supply of blood.

Approximately 75 per cent of the elderly patients who have supracondylar amputations because of arterial insufficiency cannot be rehabilitated. Only an occasional one will be able to master a prosthetic leg, and the rest eventually will use wheelchairs, walkers or crutches.

There has been a progressive decrease in the mortality rate for supracondylar amputation, from 25 per cent in the decade of the 1930's to 6 per cent by 1951, as reported by Shumaker and Moore.⁴ The surgical mortality rate for this operation on elderly debilitated patients with arteriosclerotic gangrene and infection in the San Diego County General Hospital in the period 1953-58 was 12.5 per cent. The resurgence of resistant strains of bacteria since 1951, as noted by Flynn¹ in reviewing the incidence of hand infections at the Boston City Hospital, undoubtedly bears some relationship to the present mortality rate.

Bronchopneumonia, which occurs frequently in elderly patients during the period of immobilization after major lower extremity amputation, is the major cause of death. Preoperative measurement of total and timed vital capacity, as well as determination of maximum breathing capacity before and after administration of bronchodilator drugs, will indicate which patients are likely to have respiratory difficulties after operation. Patients with dyspnea and coughing on moderate exertion are considered very poor surgical risks. Placing the patient in the semi-Fowler position after operation

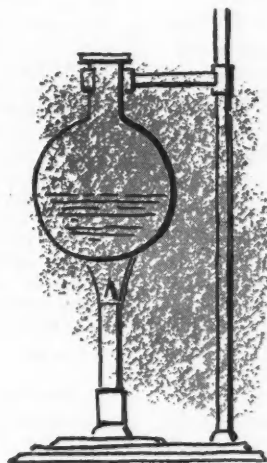
and encouraging him to change position and to breathe deeply and cough frequently, help prevent hypostatic pneumonia. Deep endotracheal suction and intermittent positive pressure breathing with administration of bronchodilator drugs and wetting agents should be employed at least four times a day for the first two or three days postoperatively. Oral hygiene, adequate hydration and the use of expectorant agents improve the character of the mucus so that it is more easily removed. If endotracheal suction is impossible and there is any suspicion of respiratory difficulty, tracheostomy should be

done. Antibiotic therapy should be instituted as soon as respiratory infection is evident.

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Failure of Proteolytic Enzymes to Suppress Post-Traumatic Inflammation

Double-Blind Control Comparison on Identical Twins,
After Dermal Abrasion

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THIS IS THE FIRST controlled study demonstrating that systemic proteolytic enzyme therapy does not improve or modify posttraumatic edema, inflammation or speed of healing. Identical twins were subjected to an identical, severely traumatic surgical procedure (dermal abrasion of the face) at the same time. All surgical and postsurgical variable factors were made as similar as possible. One twin received maximum therapeutic dosage of three proteolytic enzymes for one week after operation. The other received an inert vitamin. Careful comparison revealed no discernible difference in postsurgical course.

Proteolytic enzymes have been widely reported to reduce inflammation, and cause resorption of edema. This is said to stop pain immediately, and to speed healing. Dramatic serial color photographs of traumatic injuries fill lavishly lithographed promotional material sent to physicians. The enthusiastic articles which testify to their effectiveness in human beings are uncontrolled.^{5,6,7,8} Animal experiments, well controlled, prove beyond cavil the anti-inflammatory effect of proteolytic enzymes.⁴ However, in these experiments the quantities of enzyme used were exponentially larger than recommended for human use—from ten to over one thousand times the maximum human therapeutic dosage.⁴ Moreover, these quantities were given before production of the inflammatory response—not after, as in a clinical case. Hence the fibrin and other insoluble aggregates that subsequently form in an inflammatory zone incorporate enough proteolytic enzyme to speed their resolution. Such animal experiments are not at all analogous to the human clinical situation.

VARIABLES IN RESPONSE TO TRAUMATIC INJURY

For proper evaluation of the effect of proteolytic enzyme therapy on the postsurgical course of human patients three sets of variables must be considered:

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Submitted April 3, 1961.

• Controlled reports on the successful use of proteolytic enzymes to suppress post-traumatic inflammatory response have been based on animal subjects that were given the drug before inflammation was provoked and in the equivalent of 10 to 1,000 times maximum human dosage. All previous favorable reports on human subjects were based on uncontrolled experiments.

In the present study, the first controlled human experiment, identical twins were identically treated with dermal abrasion of the face, to remove deep acne scarring. Using double-blind technique, one of them received "inert" parenteral and buccal vitamin medication. The other received maximum recommended therapeutic dosage of three proteolytic enzymes—streptokinase and streptodornase buccal tablets, and intramuscular trypsin. No differences in edema, inflammatory response, pain or speed of healing were noted.

1. *Type and Extent of Injury*: Traumatic injuries in humans are usually accidental and randomly inflicted. The resultant inflammatory response and healing vary according to the degree, depth and extent of damage. Injury can rarely be standardized enough for comparison between cases. Animal experiments utilize graded tissue insults, such as injection or implantation of irritants. Such provocative tests can be well standardized.

2. *Extrinsic Variables*: Widely variable in human patients are such factors as age, nutrition, the degree of tissue damage by previous or concurrent disease or by previous sun exposure, x-ray therapy and the like. They can easily be minimized in animals by use of litter mates brought up under identical conditions.

3. *Intrinsic Variables*: What may be called "inherent tissue diathesis" embraces such factors as the individual immunity, regenerative power, type of protoplasm, type of connective tissue, capillary fragility, keloiding tendency, autogenous allergy and response to infecting organisms. Subject to wide disparity in humans, they can easily be equated in animals by the use of homologous strains and a larger number of test subjects.

In the treatment of twins with dermal abrasion for the smoothing of acne scars the author had opportunity to resolve these variables for an evaluation of the effect of proteolytic enzymes on human subjects.

In dermal abrasion (plastic planing) the acne pitted face (4 to 5 per cent of the total skin area) is fixed to woody hardness by solid freezing of small areas with Freon 114 spray. While each area is frozen solid, the entire epidermis and upper third of the cutis in the area is ground away with a steel brush cutting head, revolving at 14,000 revolutions per minute.

After doing 5,000 planings, I believe my technique is standardized to a high degree. The amount of surface treated (for example, the full face) and the depth of abrasion can be closely duplicated from one patient to the next, which provides a means of quantitative and qualitative control of variables for purposes of comparison. Inflammation after planing is severe, as after any extensive abrasive injury, such as deep "skinning" of an elbow or knee. The second through the fourth days after the operation, edema is often so extensive as to swell shut the eyes. Healing, with dropping of the crusts, usually takes eight days.

As to extrinsic and intrinsic variables in human subjects, in preliminary controlled comparisons of many patients, I found I was not able to pick out by inflammatory response (or lack of it) which patients had received proteolytic enzymes. However, I considered it possible that beneficial effects of the enzymes were masked by some of the extrinsic and intrinsic variables already mentioned.

The new science of gemellology, the study of twins, suggested a perfect control, since in any twins who had always lived together in the same environment, all extrinsic variables are equated. Monozygotic (identical) twins are genetically the same person. This genetic identity equates intrinsic variables. When a pair of identical twins were referred to me for plastic planing, these facts were used to set up a controlled evaluation of proteolytic enzyme therapy.

REPORT OF CASES

The patients were 26-year-old white women, registered nurses, who had lived as inseparable companions in the same environment since birth. In their early teens, both had severe acne simultaneously. An identical gamut of conventional therapy—local medications, surgical drainage, ultraviolet light, vaccines and the maximum allowable amount of x-ray treatment had been tried simultaneously on both, without significant improvement. When first seen by me, the two women were not only identical

in appearance of face and figure, but even in the severe irregular pitted postacne scars on their cheeks, foreheads, chins and necks. They had identical severe multiple, large, almost confluent, deep sebaceous cysts on the face, neck and retroauricular regions, widespread coarse comedosis, and secondary infection in scattered, deep, large pustular cystic lesions, all superimposed on severe seborrhea of the face.

Both were prepared for operation by giving them, an hour before the procedure, identical oral dosage of dextro-amphetamine, 10 mg.; amobarbital, 60 mg.; phenobarbital, 60 mg.; acetylsalicylic acid, 650 mg.; meperidine (Demerol®), 50 mg.; meprobamate, 400 mg. The planing operation on the second patient was done 20 minutes after the first. Planing extended vertically from the anterior scalp hairline over the entire face and anterior neck to the level of the cricoid cartilage, and from the midline of the nose to 5 cm. lateral to the angles of the mandibles. Because scarring was very deep, planing was very deep. Initial heavy planing was done with an abrasive serrated steel cutting head. Uneven residual scarred or pitted areas were then "feathered out" peripherally with further planing, and visible high areas were ground down to produce optimum flattening. All junctions of planed and unplaned skin were "feathered out" lightly with a diamond fraise. The thin skin on the lower eyelids was planed with this instrument.

Continuous Freon 114 (Frigiderm®) freezing was done by an assistant, just ahead of the planing brush. Simultaneously trichlorethylene (Trilene®) inhalation anesthesia was self-administered by the patient. Anesthesia and patient cooperation were excellent.

I tried consciously to equalize the degree of planing, the instrument used, the degree of freezing and all other variables. This was made easier because the lesions were closely duplicated in the two patients. At the periphery of the involved areas around the sides of the neck and laterally over the jaws, acne cysts were sparse enough for a pattern to be discernible. After the planing had been done on one patient, it could be predicted where the second would have cysts of the steatocystoma type that were not visible on surface inspection.

As a final check, to prove that the two patients were indeed monozygotic twins and not superficially similar dizygotic siblings, a 5 mm. punch skin graft was taken from a pitted scar below the ear lobe on each patient, and inserted in the donor site of the opposite patient. There was mutual acceptance of the reciprocal grafts, with no graft rejection after 18 months follow-up. This is considered the most absolute proof of monozygosity.

CHOICE OF PROTEOLYTIC ENZYMES FOR TESTING

Trypsin was selected as the primary therapeutic enzyme. It acts by breaking peptide linkages on carboxyl groups of arginine and lysine.⁵ Although it has produced severe, even fatal, anaphylactoid shock,^{1,9} it is considered about three times as effective as chymotrypsin.² (Until recently considered incapable of producing anaphylactoid shock, chymotrypsin was used extensively despite its relative ineffectiveness, but late reports indicate that it can produce severe anaphylactoid shock, including permanent brain damage.^{2,3})

As a secondary enzyme preparation, a mixture of streptokinase and streptodornase buccal tablets was selected, since its mode of action is entirely different from that of trypsin. On internal administration, streptodornase is inactive. Streptokinase activates blood plasminogen to plasmin. Plasmin acts to lyse fibrin.⁵

It seemed that maximal therapeutic dosages of these highly touted enzymes should surely produce discernible improvement to justify the considerable risk of allergic reaction to them.

DOUBLE-BLIND PLACEBO CONTROL THERAPY

As soon as operation on the second twin was completed, an attending nurse was told to determine by flipping a coin which twin would get proteolytic enzymes. That twin was given crystalline trypsin solution containing 5 mg. per cc., 2 cc. to begin with and then 1 cc. once daily, intramuscularly. In addition buccal tablets, each containing 10,000 units of streptokinase and 2,500 units of streptodornase (Varidase buccal®) were given on a schedule of 2 tablets four times daily. The other twin was given the same volume of crude liver parenterally, and

vitamin A buccal tablets on the same dosage schedule. I gave identical instructions for dissolving the buccal tablets under the tongue. I did not know which twin received the enzymes—and still do not. The patients were not told that there was any difference in their therapy. I observed and photographed their postoperative course. Not I or the patients or the attending nurse could see any discernible difference in speed of healing, or degree of swelling. Both patients had identical severe inflammation and postsurgical edema. In both cases the crusts fell off at the same time—eight days. There was no subjective difference in pain.

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Ascariasis

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WHAT WITH INCREASES in travel and migration by many people, physicians anywhere in the world may encounter patients with symptomatic ascaris lumbricoides infestations.⁶ Obscure complaints referable to the abdomen or the respiratory tract may be the presenting symptom or, less commonly, severe complications such as intestinal obstruction bring the patient to attention.

The authors are able to illustrate a variety of manifestations from their own observations. In addition a comprehensive review of the literature has been made. From these sources came the present report of a considerable number and variety of conditions that may be produced by this parasite.

The Life Cycle

Female adult worms deposit thousands of ova which are passed in the feces of the human host. These ova are extremely hardy and may survive three or four years in moist soil. They may live through freezing temperatures. A moist, warm environment is most favorable for the embryo larva to develop. When it has grown to about a quarter of a millimeter in length, it is infective to a human host. Usually development to that size takes about a month but under highly favorable conditions may be accelerated to about ten days.

Upon ingestion by the host the larvae pass to the small intestine where they penetrate the bowel wall to enter the mesenteric lymphatic chain and venules. They continue on to the right heart by way of either the lymphatic system or the portal vein and the liver. They then pass into the pulmonary circulation and penetrate the walls of the capillaries to enter the alveoli. They remain in the alveoli for about ten days and then ascend the bronchial tree and enter the esophagus to return to the small intestine. By that time they have grown to 2 to 3 mm. in length. After about eight or ten weeks they attain maturity and reproduce, fertilized ova then again being passed in the feces of the host. At this stage the round worm is from 15 to 40 cm. long and 3 to 4 mm. in diameter. The males are smaller than the females.

With massive infestations the larvae may be disseminated through the left circulation.³⁶

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Submitted April 6, 1961.

• Ascaris infestations may be found in California, particularly in patients who have migrated from endemic regions. Clinical manifestations include vague abdominal pains, unexplained fever, anemia, malaise and upper respiratory tract infections. Intestinal obstruction and infections are among the severe complications that can occur. Diagnosis is made by the observation of worms or ova in the feces, and occasionally by roentgenographic manifestations.

Pathogenesis^{21,48,56,63}

Ascaris lumbricoides produces disease in man in the following general ways: (1) Mechanical; (a) worms have a predilection for small passages, which they may obstruct, (b) a number of worms may combine to form a bolus which may obstruct a larger passage such as an intestine and (c) a worm or worms may act to initiate an intussusception or volvulus; (2) the worm may produce a toxic substance or allergen; (3) the worm may transmit infection by transporting bacteria from place to place; and (4) worms may penetrate the intestinal wall (or that of other hollow visci) and enter the peritoneal or other cavities.

Clinical Manifestations

The clinical manifestations of ascariasis have been reviewed by Swartzwelder.⁵⁹ He studied 202 symptomatic cases. Over 84 per cent of patients were 15 years of age or less. Males and females were affected equally. The incidence was less in the Negro than in the Caucasian population. Swartzwelder listed symptoms in the following order of frequency: Abdominal pain, passage of worms, vomiting, abdominal or epigastric tenderness, fever, constipation, abdominal distention, cough or cold, nausea, headache, diarrhea, convulsions, abnormal pulmonary findings, anorexia, loss of weight, weakness, malaise and restlessness. One hundred and thirty-three patients of the 202 studied passed worms before vermifuges were administered—95 in the stools, 35 in vomitus and four through the nares.

Intestinal obstructions were present in 18 cases, in six of which the patient died. Abdominal masses may be palpable when obstruction occurs due to a bolus of worms. The masses are of a doughy consistency.⁴¹



Figure 1.—X-ray film in the case of a two-and-a-half-year-old white boy admitted for head and possible abdominal injuries. There was no history of gastrointestinal disease. The patient passed an ascaris worm per rectum while in the hospital. This anteroposterior film of the abdomen shows a worm in the small intestine made visible by the contrast afforded by air in the bowel.

Keller and coworkers²⁷ found grinding of the teeth two to three times more common in children infected with ascariasis than in a control group.

New Material

Fifteen patients with proven ascariasis have been examined in the Radiology Department of the Harbor General Hospital during the past nine years. This parasite is not common in Los Angeles; nine of the patients had moved recently to Los Angeles from more or less endemic areas.

Twelve of 15 patients were under ten years of age. There were eight females and seven males. All were Caucasians.

Seven were asymptomatic and eight had symptoms. Three patients passed worms while in hospital for the treatment of fractures. Four had signs of a respiratory tract infection, two had symptoms of respiratory tract disease with accompanying vague abdominal complaints, and two had abdominal symptoms only.

In 14 cases the diagnosis was established by passage of the worms and in one by observation of ascaris lumbricoides ova in the feces. Eleven patients passed worms by rectum (one of them through the nares also); two coughed up or vomited worms, and one passed a worm through a biliary "T" tube.

None of the patients had serious complications. In some instances the confirmed diagnosis served

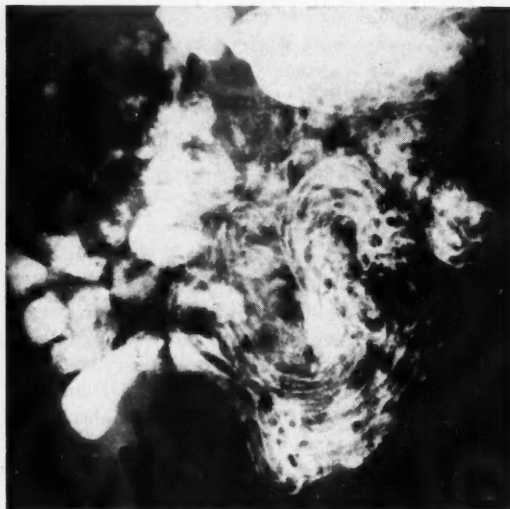


Figure 2.—X-ray film of small intestine of a three-and-one-half-year-old white girl admitted with a fractured femur. She had a cough due to an upper respiratory tract infection but no gastrointestinal symptoms. She had passed ascaris per nares and per rectum. The small intestine study with a barium meal shows multiple curvilinear and several round or oval translucent filling defects in the contrast medium due to barium displacement by the worms.

to explain symptoms that had been either puzzling or incorrectly attributed to other causes.

Laboratory Studies

Eosinophilia may be present, but in a number of cases is either not striking or is absent. In all the 15 cases observed by the authors blood cell counts were done, and in five cases eosinophils made up over 5 per cent of leukocytes.

Diagnosis is established by observing the worm in the feces or finding ova in a stool specimen.

Larvae may be found in the sputum of patients with pulmonary ascariasis.^{7,52,60}

Microscopic identification of mites and ova of the various parasites in histologic material has been reported by Moore.³⁶

Radiology

Roentgenographic evidence is most likely to be seen if the infestation is in the abdomen, particularly in the small intestine. Although there may be roentgen evidence of ascariasis in the pleura or the respiratory system, it is not specific, as the etiologic agent cannot be identified.

The roentgenographic manifestations can be divided into two major groups, those produced directly by the parasite, and those secondary to the complications brought about by the obstructive, allergenic, toxic or bacteria-carrying properties of the parasite.



Figure 3.—In the case of a three-year-old white boy who had no symptoms but passed ascaris worms per rectum, this x-ray film after barium meal shows a worm partially coated with barium.

The worm or worms may appear on x-ray films as linear tissue densities contrasted with the intestinal gas content⁵¹ (see Figure 1). A bolus of worms may appear as "a tangled thick cord."²⁵ Parasites may appear as smooth, regular filling defects, sometimes with pointed ends, within the contrast-filled lumen of a hollow organ such as the small intestine. These defects may be linear, curvilinear, coiled, round or oval. In the last two the worm is being seen "en face." The linear defects are from 2 to 40 cm. long and from 4 to 8 mm. wide.* (See Figure 2.) The parasite may be rendered visible by barium coating its walls¹⁴ (Figure 3). The intestinal canal of the worm may appear as a fine linear streak^{14,37,20} due to the contrast media it has ingested (Figure 4). In some instances this will appear as a thin line of barium density up to several centimeters long and about 1 mm. wide. A filling defect about 2 to 4 mm. wide may at times be seen on each side of the visualized intestinal tract of the worm, resulting from the displacement of barium by the body of the worm.

Barbieri,⁵ Lenarduzzi²⁹ and Strang and Warrick³⁷ reported changes in motility, spasm, irritability and segmentation of the barium column.

Francke¹⁶ and Loftstrom and Koch³⁰ reported they were unable to demonstrate such changes. In both instances the reports were based on study of 100 infested patients.

The foregoing are the keys to the radiologic recognition of ascariasis as such. The roentgenographic



Figure 4.—The patient was a seven-year-old asymptomatic white boy who had passed ascaris lumbricoides per rectum. In this film, taken after barium meal, the linear barium density in the small intestine is caused by the filling of the worm's gastrointestinal tract with barium.

changes that are secondary to complications are those of the complication, and those that are caused by worm infestation will be suspected only if there is a history of worms, or a stool examination is positive for ova or worms, or if there has been a roentgen demonstration of worms in addition to the secondary changes.

Pulmonary changes^{60,64,65} that have been reported roentgenographically observed in association with ascaris infestation are increased bronchovascular markings, prominent lung roots and parenchymal densities, generally small, soft and sometimes fleeting. The general character is that of Loeffler's pneumonia although a variety of descriptive and diagnostic names are given to these changes.

Other findings described are empyema;^{26,35,36} coin lesions, granulomatous in nature;³⁶ lung abscess;³⁵ atelectasis due to bronchial obstruction secondary to ascariasis in the bronchial tree;³¹ and thrombosis of the pulmonary artery.⁸

Olson⁴² attempted to implicate ascariasis as a cause of pulmonary calcifications by virtue of similar geographic distribution of the two conditions. His study embraced an area in which histoplasma is now known to be prevalent. It remains to be established that ascariasis is a cause of pulmonary calcifications. The presence of granulomatous lesions makes it probable that ascariasis could be responsible for pulmonary calcifications, but the actual occurrence should be rare.

In the cases observed by the authors, roentgen

*References 3, 15, 16, 17, 20, 30, 45, 50, 51.

examination of the lungs showed nonspecific or equivocal changes or no abnormalities of a suspicious nature.

COMPLICATIONS

The following complications have been reported. (1) *Ascaris* have been found in the following locations: Heart,¹⁰ lungs,^{31,35} pleural cavity,⁴⁶ pancreatic ducts,¹³ bile ducts,¹ gallbladder,³⁸ liver,⁴ Meckel's diverticulum,⁴¹ appendix,³⁷ peritoneal cavity,⁴⁹ uterine tubes,³⁹ urinary bladder,¹² and mastoid.⁵³ (2) The following organs have been obstructed by the parasites: The small intestine, by a bolus of worms,^{2,32} by intussusception³³ and by a volvulus;⁶² the colon, by adhesions produced by cholecystitis associated with *ascaris* in the gallbladder;⁹ the pyloric canal of the stomach, by a bolus of worms;⁶¹ the larynx, by a bolus of *ascaris*;¹¹ bronchus, by a single parasite;³¹ pancreatic ducts;⁴⁰ and bile ducts.¹⁸ (3) Perforations have been reported in the following locations: Small intestine,⁴⁹ stomach,³⁶ esophagus,³⁶ liver abscess,³⁴ uterine tubes,²³ bile ducts¹ and gallbladder.⁴³ (4) Infections have been associated with *ascaris* migrations to the following sites: Peritoneal cavity,⁴⁹ uterine tubes,⁵⁴ liver,³⁶ pancreas,⁴⁶ appendix,³⁷ and gallbladder.⁶⁷ (5) Infections with abscess formation associated with *ascaris* infestations have been reported in the following locations: The pleural cavity,²⁶ lung,¹⁰ subphrenic area,³ tubo-ovarian,⁵⁴ liver⁶⁶ and pancreas.³⁶ (6) Infections with granuloma formation have been found in the lung³⁶ and peritoneal and mesenteric tissues.³⁶ (7) Manifestations secondary to hypersensitivity reactions, such as eosinophilic ileitis, eosinophilic pneumonic reactions³⁶ and meningitis,³⁵ may be in this category.

Technique of Radiologic Examination

For roentgenographic examination it is desirable to have the patient fasting, as this will increase the probability of the parasites' ingesting barium and thus being demonstrated by the visualization of its intestinal tract.³

Most investigators have used serial films.³ The intervals between films have varied from every 15 minutes to approximately one film an hour. Twenty-four and 48-hour films may show a barium residue in the gastrointestinal tract of the worm.

Fluoroscopy with compression, advocated by Francke,¹⁶ would be expected to improve the diagnostic yield.

Extensive radiologic diagnostic effort would appear indicated only when usual methods of stool examination and history of passing worms have failed to establish the presence of the parasite in a case in which there is valid ground for entertaining this diagnosis.

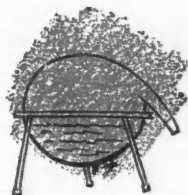
Male or immature female parasites may be present in the intestine of the host and be unrevealed by stool examinations for ova.²⁴ If no worm is passed, the diagnosis will remain unsuspected. Roentgen findings may on such occasions give valuable diagnostic information.^{16,22,28,57}

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Uroflometry in Urological Diagnosis

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THE RECORDING UROFLOMETER has become a valuable aid in urological practice. It has been used and perfected during the last eight years at this center, and the present model which is commercially available is used in a number of urological centers.

The uroflometer measures the rate at which urine is voided through the urethra. The need for such an assessment of voiding performance has long been recognized. In 1932, Ballenger¹ suggested measuring the distance a man could project his stream as an aid in measuring the degree of prostatic obstruction. In 1948, Drake² described a uroflometer to aid in the study of lower urinary tract. Drake's original uroflometer operated on the principal of a scaled recording of the weight of urine passed in a given time. However, his apparatus was cumbersome and did not become commercially available. He subsequently devised a uroflometer of another kind, which has been produced commercially. This model has overflow outlets at different levels, each overflow outlet leading into a separate compartment.

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• The automatic recording uroflometer is a simple office instrument which provides an objective record of the rate of voiding. It has proven value as a diagnostic aid in the evaluation of obstructive lower urinary tract problems and in neurotic bladder disorders. Differential uroflometry is used to make relative appraisals of the forces of expulsion of urine and of resistance to the flow of urine through the urethra. It is accomplished by measuring urine flow rate through a catheter of standard size and by comparing this with urine flow rate through the urethra. When used in conjunction with other diagnostic methods, uroflometry adds to the accuracy of urological assessment of a patient.

By observing which compartments contain urine after voiding, the maximum rate can be ascertained.

The Kaufman uroflometer^{5,6} has certain advantages which make it practical for routine use in the office. A compact single unit with durable parts, it measures 10x10x7 inches and weighs less than 9 pounds (Figure 1). A small electric motor drives a rubber wheel which propels the recording chart at a constant rate through a slot in the rear of the housing. The patient voids into a detachable funnel which directs the urine into a metal beaker sus-

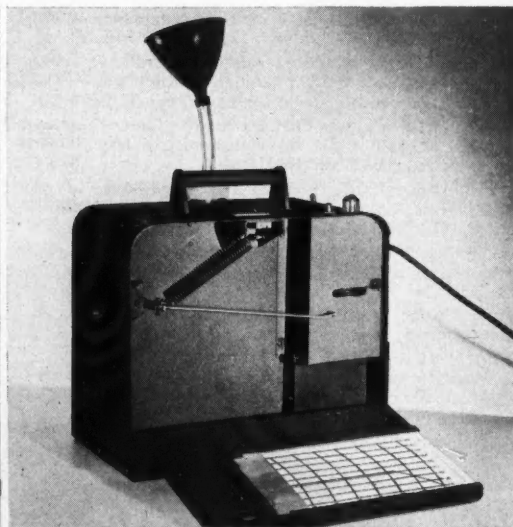
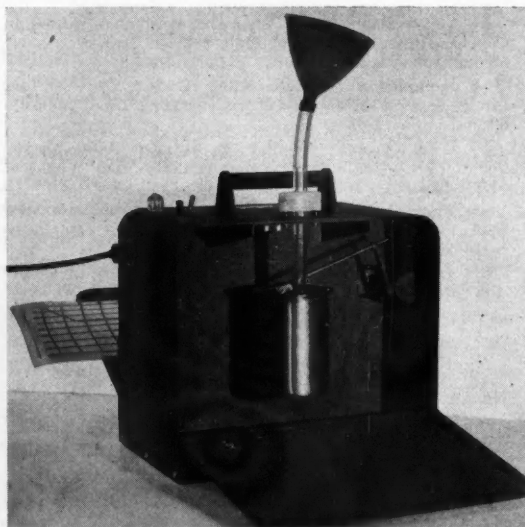


Figure 1.—Photographs of Kaufman Uroflometer from front and rear. Patient voids into funnel which directs urine into beaker suspended on arm. Descent of beaker is transmitted by coil spring to writing stylus. Card in slot of rear door is propelled by rubber wheel which is put into motion when urine running through plastic tubing into beaker closes circuit between two fine wire electrodes.

pendent on a lever. The weight of the voided urine in the beaker is transmitted by a coil spring to a recording stylus which inscribes a graph on the chart as it is propelled. The charts are printed with ordinates representing 10-second time intervals and with abscissae representing 50 ml. volume increments (weight of urine converted to volume on card). A ball point pen makes a recording on a card which becomes a permanent record for reference.

The motor in the uroflometer automatically drives the chart when urine (containing electrolytes) passes through the inflow tube, contacting two electrodes and closing the electrical circuit. This permits the patient to have privacy during micturition, thereby removing embarrassment as a possible factor in the test. When a measure of the degree of hesitancy is desired, the motor can be started by a separate switch and the time lapse before the initiation of voiding curve can be recorded. Figure 2 shows the voiding curves of a normal male and of a patient with obstructing prostatic enlargement. In the normal uroflogram the tracing forms an abrupt decline, terminating sharply when voiding ceases. With obstruction, there is lengthening of the curve, intermittency and slow termination of voiding. The maximum flow rate is determined by superimposing a transparent tinplate (Figure 3) over the greatest declination of the voiding curve. A voided volume of over 150 ml. and preferably over 200 ml. is necessary for a valid record of the voiding rate.

In the past eight years over 5,000 recordings have been made on normal patients and patients with lower urinary tract abnormalities. In addition, uroflometric observations in 1,000 public school children were made by Fetter, Drake and Perez.⁴ On the basis of these studies, normal values for adults and children have been obtained. Females normally void at a faster rate than males in all age groups. Normal adult females void at a maximum rate of between 20 and 40 ml. per second with a mean of 30 ml. per second but with an average of 31.4 ml. per second compared with the average of 28.0 ml. per second for adult males. Boys between the ages of 6 and 12 void at a mean rate of 25.3 ml. per second, whereas girls in this age group void at a mean of 28.1 ml. per second.

Differential uroflometry is used to dissociate the factors of bladder function and adequacy of the outlet. This work was originally described by Shields, Baird, and McDonald.¹⁰ The author routinely uses differential uroflometry in assessing bladder function and infravesical resistance. The patient's ability to void through a standard bladder outlet is determined by inserting a catheter of standard size and recording the effective bladder force by means of urine flow rate through the catheter. This represents the patient's potential ability to void

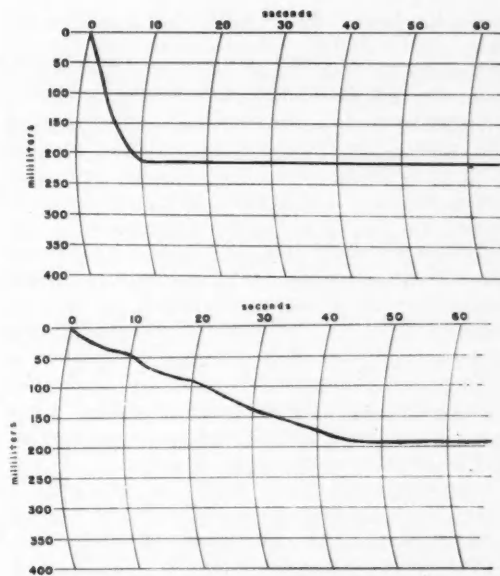


Figure 2.—Above: Normal voiding curve (uroflogram) showing maximum voiding rate of 26.6 ml. per second. Note sharp decline and direct termination. Below: Voiding curve of patient with urethral obstruction secondary to benign prostatic enlargement. Note gradual decline, maximum voiding rate of 5.8 ml. per second, slow termination.

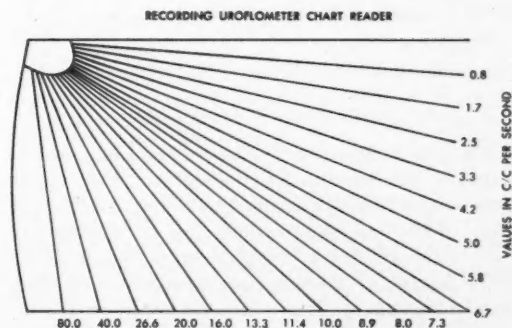


Figure 3.—Transparent tinplate for reading maximum voiding rate.

in the absence of obstruction (curve A, Figure 4). When this is compared with the patient's ability to void in the normal manner, without a catheter (curve B, Figure 4) the effect of the obstructive factor on the urine flow rate can be determined.

The force with which urine is expelled from the urethra is the sum of detrusor contraction, position and intra-abdominal pressure. The rate of micturition is the sum of these factors minus the resistance offered by the urethra and its constrictive diseases.

The method now used for differential uroflometry is as follows: After the patient has voided, a catheter is inserted to draw off residual urine, which is measured. A No. 20F straight red rubber catheter is

used; the average flow rate through a tube of this size is approximately 20 ml. per second. Through this catheter 250 to 300 ml. of sterile saline solution is instilled into the bladder and the patient is then instructed to void in the standing position through the catheter into the uroflometer. A tracing is made (Figure 4, tracing A). Then a similar amount of saline solution is reinstalled, the catheter is removed and the patient again is instructed to void into the uroflometer (Figure 4, tracing B). The disparity between the amount of solution instilled and the amount voided without the catheter is recorded as the "residual by difference" and in most cases correlates with the original residual determination.

A typical patient with infravesical obstruction (for example, prostatic enlargement) voids at a slow rate. With normal bladder function, through a No. 20F straight, rubber catheter, a patient may deliver a maximum of 20 ml. per second. A comparison of these tracings demonstrates the degree of obstruction produced by the infravesical resistance.

The typical patient with hypotonic bladder musculature may void at an impaired rate both through the catheter and through the urethra, as shown in Figure 5. In this tracing it is evident that the expulsive force is decreased, and it is unlikely that any measures directed solely to the urethral resistance will have any great effect on the voiding rate. With this information a prediction can be made as to which patients would benefit from removal of the infravesical obstruction and which would not.

INDICATIONS FOR UROFLOMETRY

Prostatic Enlargement. In enlargement of the prostate, whether benign or malignant, the voiding rate is usually affected as one of the early manifestations of urethral compression. This usually happens before the amount of residual urine is significant. Enlargement of the prostate usually occurs insidiously, and the patient is often unaware of the degree of impairment of voiding. A "slow stream" is a relative term which is difficult for both the patient and the urologist to evaluate. Urologists have been in the habit of observing the patient's voiding, but this is at best a poor method of assessing the degree of obstruction, since most patients cannot void well while the act is being witnessed. Uroflometry provides a permanent record of the patient's voiding pattern and eliminates the subjective interpretation of both the patient and the urologist. Since prostatectomy is unlikely to improve the symptoms of frequency, urgency and nocturia in a patient with residual urine of 60 ml. or less but will often improve the slow, thin or hesitant urinary stream, the need for a relative method of determining impairment in voiding is obvious. Postoperatively, the uroflometer provides an objective record of the degree

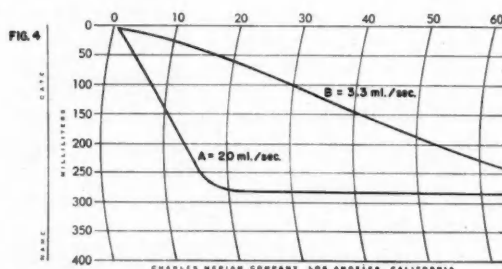


Figure 4.—Curve A shows the patient's ability to void through a No. 20F catheter (measures detrusor and abdominal force without urethral resistance). In this instance the voiding rate was 20 ml. per second. Curve B shows the patient's ability to void naturally. Difference in the voiding rate indicates degree of urethral resistance (compression). The maximum rate here is 3.3 ml. per second.

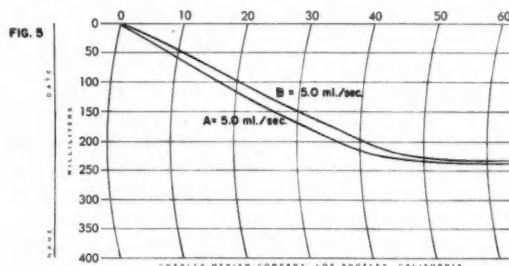


Figure 5.—Voiding rates of patient with lower motor lesion (atonic bladder). A represents voiding through a No. 20F catheter; B represents voiding after the bladder has refilled and the catheter has been removed. Similarity of the uroflograms indicates absence of significant obstructive urethral resistance.

of benefit achieved. Similarly, it may be used as a guide for the necessity of postoperative urethral dilatation or as an indication of incomplete resection. Figure 6 shows preoperative and postoperative uroflograms in a patient with prostatic enlargement treated by retropubic prostatectomy. Figure 7 shows moderate improvement in the voiding rate of a patient who had an inadequate transurethral resection, then further improvement after additional tissue was resected.

Urethral Stricture. The uroflometer is of considerable aid in determining the degree of obstruction in patients with urethral stricture. Frequently in such cases there is no significant residual urine in the bladder even though the urinary stream may be extremely slow. Postdilatation uroflograms provide an objective record of the effect of treatment and are helpful in determining the proper interval between urethral dilatations.

Urethral and urethrovaginal strictures in women comprise a large portion of the urologist's practice. Symptoms are often vague, and since women cannot observe their urinary stream, their descriptions are usually inaccurate. We are now devising a commode

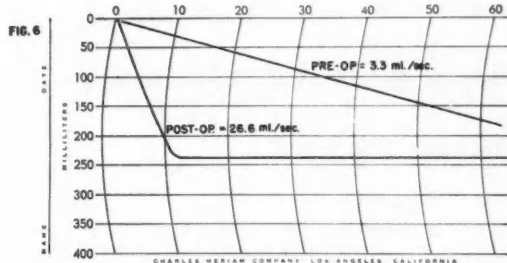


Figure 6.—Preoperative and postoperative uroflgrams of patient who had retropubic prostatectomy for benign prostatic hypertrophy.

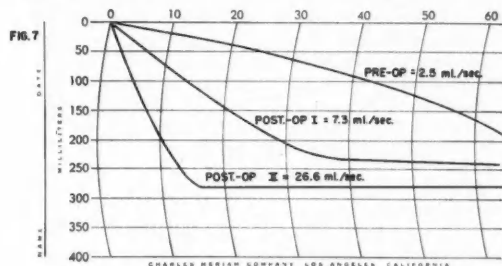


Figure 7.—Preoperative uroflgram of patient with prostatic enlargement (2.5 ml. per second), then uroflgram after transurethral prostatectomy, showing only moderate improvement (7.3 ml. per second), and finally maximum voiding rate of 26.6 ml. per second after revision of transurethral resection.

which will funnel the urine into the uroflometer and provide an accurate record of the voiding rate. Heretofore, female patients have been instructed to sit on the edge of a chair and place the funnel under the perineum. However, this awkward performance may affect the reliability of the test. Frequency of treatments is determined by the uroflgram on repeated performances.

Congenital Obstructive Lesions in Children. It has been found that children over the age of 6 can cooperate in voiding into the uroflometer, thereby providing useful information regarding the degree of impairment of the voiding rate. Such tracings, however, must be correlated with other clinical and urological findings, since the detrusor can frequently compensate effectively in young persons in producing normal voiding rates even in the presence of increased intravesical resistance.

Neurogenic Bladder Problems. Differential uroflometry has its greatest usefulness in the evaluation of neurogenic bladder problems. When the factor of urethral resistance is eliminated by having the patient void through a catheter, a measure of detrusor function is obtainable. The effect of treatment for the neurological deficit can be objectively followed with uroflgrams.

How reliable is the uroflometer in the clinical evaluation of patients with obstructive or neurogenic

voiding problems? Recent articles have suggested that the instrument might not be sufficiently reliable for its general acceptance as a tool of urological diagnosis.^{9,11} It has been stated that some normal subjects void at a rate of less than 20 ml. per second, and likewise that a few patients with prostatism void with flow rates greater than those of some normal persons. Since a slow rate of flow may indicate obstruction, detrusor weakness, psychic disturbances or be present in normal individuals, earlier observations as to the usefulness of uroflometry have been viewed askance. However, urologists who have had the longest and widest experience with the instrument,^{3,7,8} hold that it can supply valuable information. Of course, they readily admit that the information concerns only one parameter of a urological problem. Naturally a patient with a normal uroflgram but a large amount of residual urine, a trabeculated bladder and obvious urethroscopic evidence of obstruction presents a confusing problem. Likewise, there may be persons with no urinary tract disorder who have an "abnormal" rate of urinary flow. But such inconsistencies are very rare in our experience, and at any rate such persons should be viewed with the perspective necessary for an accurate diagnosis in all cases. Furthermore, the other objective methods of evaluating voiding problems are not suitable for routine clinical use,^{9,12} and therefore, are still in the realm of experimental tools. The uroflometer then should continue to be used as an extremely helpful adjunct in the diagnosis of voiding problems.

Kaufman Uroflometer is manufactured by Charles Meriam Company, 5017 Telegraph Road, Los Angeles 22.

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Emotionally Disturbed Children and Adolescents

California State Department of Mental Hygiene Programs

WILLIAM B. BEACH, JR., M.D., Sacramento

THE DEPARTMENT OF MENTAL HYGIENE currently provides services through three different fiscal approaches for children and adolescents who are emotionally disturbed: (a) 100 per cent state financing, (b) federal grant-in-aid subsidies and, (c) subsidies to local governments under the provisions of the Short-Doyle Act. In addition to either the direct operation of programs or the subsidy of programs, the Department of Mental Hygiene licenses private institutions which include two categories providing services for emotionally disturbed children, namely, (a) day care centers and (b) residential centers. Consultation is also provided by all segments of the department for those organizations and groups desiring it in connection with planning for or providing for services for emotionally disturbed children and adolescents. The way in which the money for the services is supplied—which of the three ways already mentioned—determines to a large extent the type and degree of control by the Department of Mental Hygiene.

100 PER CENT STATE FINANCING

1. Residential Treatment Programs

Two of the state hospitals offer specialized programs for children and adolescents, the Napa State Hospital in Northern California and Camarillo State Hospital in Southern California. In the fiscal year ended June 30, 1960, Napa State Hospital admitted 342 patients through age 18 and Camarillo State Hospital admitted 314. Table 1 gives data on these patients with regard to diagnosis, age and sex. Most of the patients admitted were in the age group 13 through 18. Tables 2 and 3 give data on the patients actually resident in the two units on June 30, 1960. Most were in the 13 through 18 age group and the psychotic disorders predominated. A preponderance of psychotic disorders is to be expected, since the turnover in that group is not great, and there is an increasing number of long-term patients as time goes on. This can be expected to increase still more. Method of admission generally falls into one of

• Through programs that are directly operated by the state and through subsidy programs using state funds and federal funds, the Department of Mental Hygiene in California provides services for children and adolescents who are emotionally disturbed. Private institutions for these purposes, in the form of residential centers and day care centers, are licensed by the Department of Mental Hygiene. Direct services provided by the Department of Mental Hygiene include residential treatment programs and out-patient clinic services.

There have been increased demands for more residential treatment programs and for services for rural areas. Indications have been noted of increased need for research on questions dealing with services of this kind and increased training programs to provide adequate numbers of trained personnel.

three main categories: (a) voluntary, (b) commitment for mental illness, and (c) for observation, by court order, for a period up to 90 days. Courts frequently resort to orders of the latter kind for youthful offenders who they feel may have emotional problems causing or contributing to behavior problems. On patients of this kind, a report is made to the court. The commitment for mental illness and voluntary admission are actually for residential treatment of emotionally disturbed children and adolescents. The units at both Napa State Hospital and Camarillo State Hospital are specialized units with specialized programs for their patients. Facilities, staff and program are specifically for the age group served and include a full school program staffed with competent, well-trained educators.

In addition to these specialized units, a committing court may commit a mentally ill adolescent 16 years of age or over to the state hospital nearest his home. At this time only a small portion are admitted to other than Napa and Camarillo. In the year ended June 30, 1960, there were 857 admissions of patients under 18 years of age to the hospitals for the mentally ill, including Napa and Camarillo. These 857 were 3.8 per cent of all admissions. Of the 857, a total of 656 were admitted to Napa and Camarillo, leaving only 201 under 18 admitted to the other eight hospitals for the mentally ill.

Chairman, Committee on Children's Services, California State Department of Mental Hygiene, Sacramento.
Submitted April 14, 1961.

TABLE 1.—Data on Juvenile Patients Admitted to Camarillo and Napa State Hospitals, Year Ended June 30, 1960

Diagnosis	Total	Male	Female	Age (Years)		
				0 to 5	6 to 12	13 to 18
Camarillo State Hospital:						
Acute brain syndromes (drug or poison intoxication, except alcohol)	1	1	....	....	....	1
Chronic brain syndromes:						
Intracranial infection.....	1	1	....	....	....	1
Birth trauma.....	3	2	1	....	1	2
Other trauma.....	2	2	....	....	....	2
Circulatory disturbance.....	1	1	....	....	....	1
Convulsive disorder.....	26	14	12	....	8	18
Intracranial neoplasm.....	1	1	....	....	1	....
Diseases of unknown and uncertain cause.....	2	2	....	....	1	1
Unknown cause.....	1	1	....	....	....	1
Chronic brain syndromes, total.....	37	24	13	....	11	26
Psychotic disorders:						
Psychotic depressive reaction.....	1	....	1	....	....	1
Schizophrenic reactions.....	136	82	54	2	17	117
Psychotic disorders, total.....	137	82	55	2	17	118
Psychoneurotic reactions.....	21	10	11	....	5	16
Personality disorders:						
Personality pattern disturbance.....	28	23	5	....	10	18
Personality trait disturbance.....	59	37	22	2	26	31
Antisocial reaction.....	6	2	4	....	....	6
Drug addiction.....	3	3	....	....	....	3
Personality disorders, total.....	96	65	31	2	36	58
Transient situational personality disturbance.....	20	7	13	....	6	14
Mental deficiency.....	2	2	....	1	1	....
All diagnoses, total.....	314*	191	123	5	76	233
Napa State Hospital:						
Chronic brain syndromes:						
Diseases and conditions due to prenatal influence.....	3	1	2	....	3	....
Epidemic encephalitis.....	2	1	1	....	....	2
Other intracranial infections.....	1	1	....	....	....	1
Birth trauma.....	1	1	....	....	1	....
Other trauma.....	3	3	....	....	1	2
Convulsive disorder.....	4	2	2	....	....	4
Diseases of unknown and uncertain cause.....	3	2	1	....	2	1
Unknown cause.....	4	4	....	....	1	3
Chronic brain syndromes, total.....	21	15	6	....	8	13
Psychotic disorders:						
Manic-depressive reaction.....	1	1	....	....	....	1
Schizophrenic reactions.....	117	75	42	5	13	99
Other.....	2	1	1	....	2	....
Psychotic disorders, total.....	120	77	43	5	15	100
Psychoneurotic reactions.....	25	9	16	....	1	24
Personality disorders:						
Personality pattern disturbance.....	52	37	15	....	9	43
Personality trait disturbance.....	40	31	9	....	7	33
Antisocial reaction.....	14	11	3	....	....	14
Dyssocial reaction.....	2	2	....	....	....	2
Sexual deviation.....	1	1	....	....	....	1
Drug addiction.....	1	....	1	....	....	1
Personality disorders, total.....	110	82	28	....	16	94
Transient situational personality disturbance.....	36	24	12	....	5	31
Mental deficiency.....	25	17	8	....	3	22
Without mental disorder.....	5	5	....	....	2	3
All diagnoses, total.....	342*	229	113	5	50	287

*Including changes in legal classification.

TABLE 2.—Juvenile Patients Resident, by Diagnosis, Age, and Sex, Camarillo State Hospital, June 30, 1960

Diagnosis	Total	Male	Female	Age (Years)		
				0 to 5	6 to 12	13 to 18
Chronic brain syndromes:						
Birth trauma.....	5	4	1	....	1	4
Other trauma.....	4	4	....	....	....	4
Convulsive disorder.....	24	14	10	....	9	15
Diseases of unknown and uncertain cause.....	2	2	....	....	1	1
Unknown cause.....	2	2	....	....	1	1
Chronic brain syndromes, total.....	37	26	11	....	12	25
Psychotic disorders:						
Schizophrenic reactions.....	160	103	57	1	47	112
Other.....	1	1	....	....	....	1
Psychotic disorders, total.....	161	104	57	1	47	113
Psychoneurotic reactions.....	12	8	4	....	3	9
Personality disorders:						
Personality pattern disturbance.....	14	9	5	....	4	10
Personality trait disturbance.....	40	29	11	1	21	18
Personality disorders, total.....	54	38	16	1	25	28
Transient situational personality disturbance.....	13	8	5	....	4	9
Mental deficiency.....	4	3	1	....	....	4
All diagnoses, total.....	281	187	94	2	91	188

TABLE 3.—Juvenile Patients Resident, by Diagnosis, Age, and Sex, Napa State Hospital, June 30, 1960

Diagnosis	Total	Male	Female	Age (Years)		
				0 to 5	6 to 12	13 to 18
Chronic brain syndromes:						
Diseases and conditions due to prenatal influence.....	1	1	....	....	1	....
Epidemic encephalitis.....	1	....	1	....	....	1
Other intracranial infections.....	1	1	....	....	1	....
Drug or poison intoxication (except alcohol).....	2	1	1	....	1	1
Convulsive disorder.....	4	2	2	....	....	4
Unknown cause.....	1	1	....	....	....	1
Chronic brain syndromes, total.....	10	6	4	....	3	7
Psychotic disorders:						
Schizophrenic reactions.....	95	60	35	2	17	76
Other.....	1	....	1	....	1	....
Psychotic disorders, total.....	96	60	36	2	18	76
Psychoneurotic reactions.....	8	4	4	....	....	8
Personality disorders:						
Personality pattern disturbance.....	16	7	9	....	1	15
Personality trait disturbance.....	8	5	3	....	2	6
Antisocial reaction.....	2	2	....	....	....	2
Dyssocial reaction.....	1	1	....	....	....	1
Sexual deviation.....	1	1	....	....	....	1
Drug addiction.....	1	....	1	....	....	1
Personality disorders, total.....	29	16	13	....	3	26
Transient situational personality disturbance.....	3	2	1	....	....	3
Mental deficiency.....	10	10	....	....	....	10
Without mental disorder.....	1	1	....	....	....	1
All diagnoses, total.....	157	99	58	2	24	131

TABLE 4.—Admissions and Readmissions of Outpatients, by Clinic, Selected Age Groups and Sex, California State Mental Hygiene Clinics, Year Ended June 30, 1960

Clinic	Total Admissions, All Ages*	First Admissions						Readmissions					
		Total, All Admissions of Children and Adolescents			0 to 4			5 to 9			10 to 14		
		Total, First Admissions of Children and Adolescents			0 to 4			5 to 9			10 to 14		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total
Berkeley	491	130	122	252	7	4	11	8	28	35	27	21	48
Chico	205	91	79	170	1	4	5	14	14	28	30	13	43
Fresno	358	47	45	92	...	...	...	7	2	9	10	3	13
Los Angeles:													
Los Angeles	538	114	102	216	1	1	2	16	5	20	16	26	42
Long Beach	69	4	4	8	...	...	...	...	...	...	...	...	...
San Fernando	162	13	13	26	...	...	...	...	...	...	...	...	...
San Pedro	200	29	24	53	...	...	...	1	1	2	9	2	11
Los Angeles, all branches, total	969	160	143	303	1	1	2	17	6	36	19	39	55
Riverside	183	86	77	163	5	3	8	21	10	16	8	8	24
Sacramento	414	66	62	128	...	...	...	7	3	10	7	20	27
San Diego	334	59	56	115	...	...	...	1	15	3	20	4	24
All clinics, total	2,954	639	584	1,223	14	13	27	109	34	149	71	107	178

*Represents total of all admissions, for all age groups, including all adults, for purposes of comparison.

The Langley Porter Neuropsychiatric Institute in San Francisco and the U.C.L.A. Neuropsychiatric Institute both have residential treatment programs. The unit at U.C.L.A. is new and just starting operation. The unit at Langley Porter is small but is intensive in its therapeutic approach. There is special emphasis in the program at both institutes on teaching and research, since both facilities are operated in conjunction with medical schools. The staffs are in part Department of Mental Hygiene personnel and in part University of California personnel. Of the medical staff at the Langley Porter Neuropsychiatric Institute all except one of the physicians are employees of the University of California School of Medicine. The staffs of these two institutes, which include some of the leaders in the field of child psychiatry today, have devoted considerable time to consultation and assistance in program development in all parts of the state as well as nationally.

2. Outpatient Clinic Programs

The staffs of the two neuropsychiatric institutes see children and adolescents in large numbers. For the year ended June 30, 1960, 379 were admitted. In addition to the outpatient departments of the two institutes the state operates seven regional mental hygiene clinics. Some of them, like the one at Chico, serve geographical areas of considerable extent. The seven clinics are all-purpose, general psychiatric clinics, and how great a proportion of the total number of patients is made up of children and adolescents depends on the training and interest of the staff. Several of the clinics are under the direction of psychiatrists with considerable training and experience in working with children and adolescents. The seven regional clinics are at Berkeley, Chico, Fresno, Riverside, Sacramento, San Diego and Los Angeles. The one at Los Angeles has branch clinic operations in Long Beach, San Fernando and San Pedro. These seven clinics and their branches admitted 639 children and adolescents through age 17. Table 4 gives additional data on them. Adding to

TABLE 5.—Discharges of Children and Adolescents Through Age 17 from California State Mental Hygiene Clinics for Fiscal Year Ended June 30, 1960

Diagnostic Category	Total Discharges Children and Adolescents	Per Cent of Total in Residence
Chronic brain syndromes.....	22	3.5
Psychotic disorders	34	5.5
Psychophysiological disorders.....	1	0.1
Psychosomatic disorders	67	10.7
Personality disorders	84	13.5
Transient situational personality disturbances	291	46.8
Mental deficiencies	22	3.5
Without mental disorder not diagnosed	101	16.4
Total	622	100.0

TABLE 6.—Total Admissions, First Admissions, and Readmissions, by Program, Service, Facility, Age Group and Sex, State and Local Mental Health Programs, Year Ended June 30, 1960

Program, Service, Facility	Total, All Admissions	First Admissions						Total, Re-admissions	Readmissions										
		Age in Years							Age in Years										
		0 to 11		12 to 17		18 and Older			0 to 11		12 to 17		18 and Older						
		M	F	M	F	M	F		M	F	M	F	M	F					
All inpatient services:																			
Contra Costa County	479	359	...	5	4	158	192	120	...	1	1	75	43						
Los Angeles County	861†	623	9	6	10	12	221	365	238	10	9	66	128						
San Francisco County	1,690	1,163	...	...	3	2	624	534	527	...	...	319	208						
San Joaquin County	212	149	...	...	1	11	45	92	63	...	...	17	44						
San Mateo County	1,602	1,035	1	...	5	20	513	496	567	...	2	2	294	269					
All inpatient services, total	4,844†	3,329	10	6	24	49	1,561	1,679	1,515	10	9	771	692						
All outpatient services:																			
Contra Costa County	432	387	18	13	42	21	86	207	45	1	...	13	22						
Los Angeles County	771†	719†	...	...	1	11	260	447	52	...	...	17	34						
Monterey County	111	97	33	14	29	14	3	4	14	5	4	...	1						
San Francisco County:																			
Division of Mental Hygiene	609	524	226	130	79	52	9	28	85	35	15	12	14	5	4				
County Hospital	227	211	...	...	2	1	77	131	16	1	...	...	...	7	9				
Adult Guidance Center*	977	336	...	...	1	...	236	99	641	...	...	...	...	497	143				
San Francisco County, total	1,813	1,071	226	130	82	53	322	258	742	36	15	12	14	509	156				
San Joaquin County	578	565	40	15	83	52	147	228	13	2	...	1	3	4	3				
San Jose, City	252	214	15	4	29	18	46	102	38	4	2	6	1	3	22				
San Mateo County	1,167	1,035	157	51	176	105	249	297	132	8	6	25	8	39	46				
Santa Clara County	799	729	105	46	75	52	168	283	70	8	4	3	3	22	30				
Santa Cruz County	284	239	36	10	34	32	36	91	45	3	3	11	7	5	16				
Sonoma County	396	356	50	11	52	40	65	138	40	...	...	5	2	9	24				
Ventura County	98	87	16	1	13	10	17	30	11	2	...	2	...	...	7				
All outpatient services, total	6,701	5,499	696	295	616	408	1,399	2,085	1,202	69	34	72	45	621	361				
All rehabilitation services:																			
Los Angeles County:																			
Olive View Sanitarium	142	141	...	...	6	1	69	65	1	...	...	...	...	...	1				
Rancho Los Amigos	35	35	...	...	1	2	18	14	...	...	...	...	...	...	...
Los Angeles County, total	177	176	...	...	7	3	87	79	1	...	...	...	...	...	1				
San Joaquin County	35	35	...	1	...	1	9	24	...	...	...	...	...	...	...
San Mateo County	240	216	...	...	...	...	130	86	24	...	...	...	...	16	8				
Sonoma County	30	30	...	...	1	1	11	17	...	...	...	...	...	...	...
All rehabilitation services, total	482	457	...	1	8	5	237	206	25	...	...	...	...	16	9				
All inpatient services	4,844	3,329	10	6	24	49	1,561	1,679	1,515	10	9	771	692						
All outpatient services	6,701	5,499	696	295	616	408	1,399	2,085	1,202	69	34	72	45	621	361				
All rehabilitation services	482	457	...	1	8	5	237	206	25	...	...	...	...	16	9				

*The San Francisco Adult Guidance Center, which operates as an alcoholic rehabilitation center, reported to the department with the outpatient psychiatric clinics during fiscal year 1960, although its operations are not typical of such clinics.

†Of the 1,142 total admissions to Los Angeles County Hospital, 281 were admitted and discharged before data reporting began, and are not included in this summary.

†Of the 824 outpatient admissions in Los Angeles County, 53 were admitted and discharged before data reporting began or were still to be reported at publication, and are not included in this summary.

this number the admissions at the two neuropsychiatric institutes for the fiscal year ended June 30, 1960, brings the total to 1,018. Table 5 shows the proportions of patients of various diagnostic categories discharged during the fiscal year ended June 30, 1960.

SUBSIDY PROGRAMS USING STATE FUNDS

The Short-Doyle Act, passed in 1957, was developed by the legislature to encourage the development of local mental health services. Programs are locally administered and locally controlled. Any county, or combination of counties, may establish such programs. So can a city or a combination of cities with at least 50,000 population. The local government is reimbursed 50 per cent for all eligible expenditures incurred.

There are five kinds of services possible: (a) Inpatient treatment, (b) outpatient clinics, (c) rehabilitation services, (d) consultation service and, (e) educational services. Certain limitations apply to these services in terms of patients that can be served. Patients must be voluntary and inpatient treatment has a 90-day limitation. This latter limitation would affect any long-term residential treatment of a child. Since most intensive residential treatment of children is long-term, this limitation curtails the usefulness of the act for such care. The voluntary requirement also imposes a limitation since there can be no reimbursement for patients seen as part of a court order. This excludes the use of the act for diagnostic evaluations for juvenile courts and juvenile halls. Despite these limitations, however, many children and adolescents are served through the provisions of the act.

Table 6 gives the data for admission by age group to the Short-Doyle facilities for the fiscal year ended June 30, 1960. This table gives the information for the three services allowed under the act for direct patient service, namely (a) outpatient services, (b) inpatient services and, (c) rehabilitation services. In several programs there are specific child guidance clinics, while in many others the outpatient clinics operate on a general basis, dealing with all age groups, including children and adolescents. In the establishment of these facilities, there has been a decided effort on the part of the local governing bodies to give a high priority to establishing services that will serve children and adolescents. The two possible services under the provisions of this act which do not provide for a direct patient service are (a) consultation and (b) educational services. The consultation service provides for professional staff to consult with nonpsychiatric professional groups and individuals about their clients and about patients. The educational services provide for the

teaching of mental health and psychosocial concepts to nonpsychiatric professionals or to the general public. The consultation service has been particularly well accepted by the local programs. It has been used especially for personnel in school departments, health departments and probation departments in relation to their work with children and adolescents.

FEDERAL PROGRAMS USING STATE FUNDS

The Department of Mental Hygiene is the state authority for providing the allocation of federal grant-in-aid funds to local areas for the development and support of community mental health services. These funds are limited in amount and usually are under \$450,000 a year. Forty-five applications for grants, for many different kinds of program for the fiscal year 1961-62 have been received. Prominent in the requests each year are for money for services to children and families. For example, included in the requests were five for psychiatric clinics—mainly for children, four for family casework services, one for inservice training in counseling for teachers, two for day treatment programs for emotionally handicapped children, one for educational counseling services and one for group counseling of fathers and sons in a church setting. These funds are granted for a limited period, usually not more than three years; and if granted for that period, the amount diminishing each year, it being expected that the local agency will plan a gradual assumption of financial responsibility for the program. Since the available funds are limited, only a portion of the requests can be granted.

PRIVATE INSTITUTIONS LICENSING

Of the several different kinds of privately operated institutions licensed by the Department of Mental Hygiene, two, specifically—day-care and residential treatment centers—are for services for children and adolescents. In the day-care center category there are four that have services for either children or adolescents. These are facilities that provide care during the day, the patient residing in his own home the rest of the time. Occupational therapy is provided, as are organized recreational programs. Psychiatric treatment and counseling may be available. There are three licensed residential treatment centers, with a combined capacity of 229, for emotionally disturbed children. They admit patients of school age for treatment of mental or emotional disturbances requiring psychiatric treatment. There may be an educational program on the grounds, or the children may attend a public school.

PROBLEM AREAS AND AREAS FOR FUTURE PLANNING

Four main areas for programs for dealing with emotionally disturbed children and adolescents require additional consideration and planning for the future:

1. Population increases will necessitate either more residential treatment units or some alternate approach such as the day hospital.

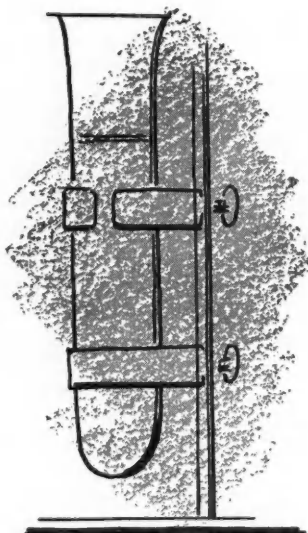
2. Rural areas, remote from urban areas with specialized programs of all kinds for children and adolescents, have needs that are not being met adequately. Small populations in these areas prevent local establishment of programs because of the cost

and the factor of distance that is involved in either the patient traveling to a distant unit or the distant unit traveling to the patient.

3. The opportunities and need for further research into the problem of children and adolescents are many and research should be developed and expanded in this area.

4. To staff facilities adequately, increased numbers of trained personnel are required. This in turn requires an exploration of existing training programs and the finding of ways to develop and expand them.

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The Prevention of Lung Cancer

Applications of Some Current Theories

EMIL BOGEN, M.D., Arcadia, DAVID S. BOGEN and R. I. TANNER, Ph.D.

CANCER OF THE LUNG, a rarity only a generation ago,¹ has increased greatly in recent years and now kills more than 35,000 Americans annually, accounting for nearly five per cent of all deaths of males.¹⁶ Only a small part of this increase can be ascribed to changes in the age distribution of the population and improvements in the diagnosis of the disease.¹⁵ The disease is world wide, but there are differences in incidence in various places and segments of the population, which may suggest possible etiological factors.⁷

DIAGNOSIS AND TREATMENT

To facilitate surgical attack on the disease, attempts have been made to diagnose lung cancer early by searching clinical history and physical examination, by widespread minifilm surveys, by repeated x-ray studies of high incidence groups, by energetic bronchoscopic examinations, by microscopic examinations of sputum and bronchoscopic washings for abnormal cells, and by early exploratory operations. Not often, however, can cancer of the lung be found in time for successful treatment.³ Even so, many lives have been saved by successful surgical resection. The physician who was originally so treated by Graham⁸ survived many years as a result of the operation. The proportion of such successful cases among the large number in which operation is done is still quite small, however. In almost half of all recognized cases of lung cancer, by the time the lesion is diagnosed it is too far advanced for operation to be contemplated.⁹ And in about half of the remainder the lesions are found at operation to be so extensive that there is little chance for more than palliation. Even in the minority of all lung cancer patients who have radical resection of the involved lobe or lung, less than a third at best (and in most series less than a tenth) survive for five years. Thus less than one in twenty cases of lung cancer is cured by present operative measures.¹⁰

Many failures in surgical removal of lung cancer result from late diagnosis, after local invasion

• The rapid increase in the incidence of bronchogenic carcinoma, the difficulties in early diagnosis and the infrequency of successful treatment emphasize the importance of attempts at its prevention. Much has been learned regarding the role of a variety of environmental factors in the genesis of this disease, although further studies are to be desired.

The complete elimination of exposures to excessive irradiation or the inhalation of radioactive substances, to inorganic, organic or animate particles which may be responsible for chronic pulmonary diseases, and especially to automobile exhaust and cigarette smoke, occupational irritating or carcinogenic air pollutants and other predisposing conditions may require extensive changes in industry, government and society. A number of practical personal precautions are available, however, which may greatly reduce the hazard for the individual observing them.

has already affected the mediastinal structures, or lymphatic or hematogenous spread has carried the disease to the adrenal glands, the brain and other areas. Other failures are ascribable to inept operation or to spread at the time of operation. Even when diagnosis is early and extensive operative resection with complete removal of all tumor cells is carried out before metastasis has occurred, the same factors which lead to the original malignant neoplasm may lead to the development of further foci of bronchogenic carcinoma.

This does not mean that efforts should not be made to detect lung cancers early and to explore and resect whenever the diagnosis appears probable and complete removal feasible. Deep x-ray and other forms of irradiation may be of palliative value in some cases. Chemotherapy for lung cancer is still a slim hope for the future. Faith healing and quackery abound, and sometimes lead to loss of even the little chance that operation might offer.

PREVENTION

The rapid increase in the incidence of bronchogenic carcinoma, the difficulties of early diagnosis and the infrequency of successful treatment emphasize the importance of attempts at prevention. Prophylaxis of malignant disease is by no means an untried and unproved procedure.¹⁷ As soon as caus-

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ative factors or conditions favoring the development of a condition are recognized, measures may be taken to overcome them. Many occupational cancers, from the chimneysweeps' cancer and the mule-spinners' cancer of England to the aniline workers' bladder cancer or the luminous-watch painters' bone sarcoma in our own country, have been almost entirely overcome due to advances of industrial hygiene.⁴

As yet, however, no coordinated effort aimed primarily at lessening the incidence of lung cancer has been made although much has been learned in recent years regarding the role of a variety of factors that are associated with increased incidence of this disease. While further studies are greatly to be desired, it is well to take note of Maisin and Clemmesen's¹² observation that "it was about 150 years after Percivall Pott explained the etiology of chimneysweep's cancer and prescribed methods for its prevention before carcinogens were demonstrated in soot." It seems warranted to urge, therefore, that "we show the same practical sense as our forefathers and not look for direct proofs which are out of our reach before we transmit experience into practical measures."¹²

SUSCEPTIBILITY

Hereditary factors that predispose to lung cancers in mice do not appear important with regard to the common forms of bronchogenic carcinoma in man. Hence, without more knowledge than we have, eugenic considerations are of little value in preventing lung cancer. Congenital changes due to prenatal irradiation, chemical poisons or infective agents, which may predispose to some forms of malignant disease, especially leukemia or teratoma in animals, as well as to other congenital defects in man, have not been shown to cause lung cancer.

Age, sex, race, place, occupation and other factors associated with differences in the incidence of carcinoma of the lung usually reflect differences in exposure to external carcinogens rather than any constitutional difference in susceptibility, but study of data of this order may lead to earlier diagnosis and treatment, and perhaps may lead to identification of some of the carcinogenic factors. Abnormalities in body build, hormonal and nutritional disturbances, pigmentation, overweight and other constitutional factors that affect the incidence of some kinds of cancer have not been particularly implicated in cancer of the lung.

Infections may be direct etiologic agents in the virus tumors of plants and in the leukemias and lymphosarcomas in fowl and mice, but that they are a direct cause of lung cancer in humans has not been demonstrated. Multiple alveolar cell carcinomatosis or Jagsiekte's disease in sheep may be due

to an infective virus but no such agent has been demonstrated in similar looking tumors in man or in other kinds of lung cancers in animals.

Reaction to influenza virus or other acute or chronic lung infections or the inhalation of various physical and chemical irritants may produce mild injury of the bronchial and alveolar epithelium with regeneration leading to cellular proliferation with hyperplasia and metaplasia suggesting early stages of malignant changes. This may be merely a superficial resemblance, or it may indirectly facilitate other carcinogenic factors. Thus there may be increased vulnerability to carcinogenic changes during these regenerative processes, or the resultant physiological change may lead to increased deposition or absorption, or to lessened transportation and removal of carcinogenic materials.¹¹

OCCUPATION

Occupational exposure leading to cancer of the lung may be found in many industries. Asbestos, arsenic, beryllium, chromium, nickel, metal grindings and foundry fumes have been especially incriminated. An increased incidence of lung cancer has been reported in artificial gas workers, but not yet in natural gas or petroleum refinery workers or in garage and service station workers in whom it might be anticipated.

The lung cancers in the miners of Schneeberg and Joachimsthal, the first occupational instances known, were probably due to inhalation of radon and other radioactive particles, although external irradiation or absorption of arsenic and other carcinogens may have played a part also. Exposure to radiation by radiologists, x-ray technicians and persons who work with x-rays in industrial processes, and more recently in atomic energy plants, may produce some increase in incidence of lung cancer, but this seems small compared with the increased incidence of leukemia, bone sarcoma, skin cancer and other more common effects.

The carcinogenic effect of direct radiation and later fallout from fission and fusion atomic explosions is chiefly manifested in the skeletal, connective, hematopoietic and cutaneous tissues, but some pulmonary involvement, especially from the inhalation of radioactive isotopes, cannot be excluded. Civil defense education and precautions in the event of known or expected hazard may help minimize the carcinogenic effect.

AIR POLLUTION

Mortality rates from cancers of the respiratory tract are much higher in large cities than in small ones, and as compared with rural areas are higher

yet. Some of the disparity in death rates may be owing to disparate statistical material rather than to real difference in incidence of disease: Thus more people die with undiagnosed lung cancer in the rural than in the urban areas, or go to a city to be treated and die there. Differences in age, sex, race, occupation, and habits (such as the use of cigarettes) between urban and rural populations account for another part of the disparity. Still it is probable that air pollution, which is greater in all cities, conspicuously in London and Los Angeles, is an important factor in the higher incidence of death from lung cancer in cities.

A large variety of unsaturated polycyclic hydrocarbons and other aromatic and aliphatic organic compounds with carcinogenic properties may be found in the air. Some of them arise from the tars and asphalts used in paving streets and roofing buildings, some from fuels or from other substances used or produced in industrial processes or from combustion products of domestic or industrial waste and open burning dumps. Perhaps the most abundant and dangerous air pollutants arise from the vaporization of unburned petroleum and its products, and from their incompletely oxidized derivatives in the exhaust of motor vehicles.

Some reduction in acute irritants as well as in carcinogenic substances in the atmosphere may be expected from changes in materials and processes used in industry, from the use of double chamber incinerators and other measures to promote complete combustion, from the installation of electrical precipitators or filters in smokestacks for recovery of sulphur and other substances now lost in fumes and from innumerable other specific measures. Reduction of combustion of all kinds, and wetting down of dust, particularly that containing tars and other carcinogens, before vigorous sweeping or other activities which might scatter it into the atmosphere, may also help.

CIGARETTES

Cigarette smoking is by far the most important although not the only factor associated with the induction of cancer of the lung. Variations in individual susceptibility, in cosmic and other sources of radiations, in occupational inhalation of carcinogenic agents and in exposure to other forms of air pollution may all contribute to the occurrence of lung cancer but to a lesser degree. Although, as many observers have pointed out, many angles of the problem require further elucidation,¹⁴ the evidence for a direct relationship between cigarette smoking and lung cancer is overwhelming.¹⁵

The carcinogenic effect of the use of tobacco is indicated by the relationship between the site of malignancy and the manner of use of tobacco. Lip cancers are most frequent in smokers of short-stemmed clay pipes; tongue and throat cancers in cigar smokers; palatal cancers among an Indian group who habitually insert the lighted end of the cigarette in the mouth, and buccal cancers in chewers of tobacco mixed with lime and betel nut. Lung cancers, on the other hand, occur chiefly in persons who inhale the fumes of tobacco into the bronchi and the lungs—that is, in cigarette smokers.

The quantitative relationship between the incidence of lung cancer and the amount of tobacco consumed, as indicated either by the number of cigarettes smoked daily, or by the number of years that the practice has been followed or by the size of the stump of the cigarette left unburned, supports the etiological importance of smoking in the genesis of lung cancer.⁶ The decreased incidence among persons who have quit smoking even after considerable exposure also is indicative.

The relationship between cigarette smoking and lung cancer has been clarified by recent histopathological and physiological investigations. Hyperplastic and metaplastic changes are strikingly increased in the epithelium lining the bronchial mucosa of cigarette users, especially in heavy smokers.² Smoke constituents and other air pollutants are deposited and concentrated in such areas.

It has been pointed out that cigarette smoking is especially associated with the common squamous cell carcinomas, ranging from highly differentiated epidermoid to undifferentiated oat-shaped or small round cell forms, and not with the pure adenomas, adenocarcinomas, alveolar cell carcinomas and various rarer forms arising from other cell types. The increase in lung cancers in recent years, as well as the much higher incidence of lung cancers in men than in women, and in cigarette smokers than in nonsmokers—these phenomena are associated mainly with the squamous cell varieties.⁵

Arsenic, 2,4 dibenzanthracene and other carcinogens have been demonstrated in cigarette smoke as well as in other sources of air pollution. Repeated and prolonged exposure to such agents may lead to the development of cancer at sites of localization and concentration of these materials, as has been shown to occur in experimental animals.

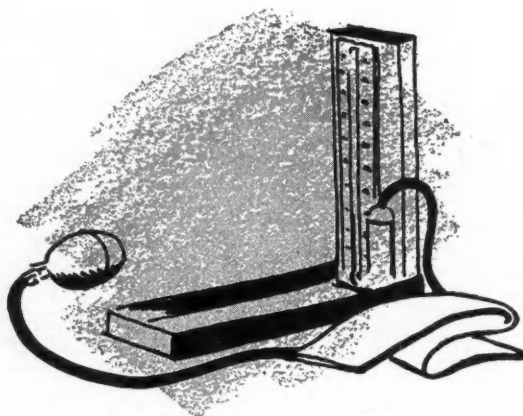
The experimental evocation of cancer of the skin and other sites in mice and other animals by the application of whole tobacco smoke or condensates, tars and other products has been repeatedly reported.¹³ Negative results, especially in inhalation experiments, may be due to inadequate dosage and duration of exposure or an insufficient number of

animals or other such factors. Although many problems regarding it need further research, the evidence against the smoking of cigarettes seems sufficiently convincing to warrant immediate action.

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Indications for Operation in Laryngeal Cancer

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THE ADVENT of newer techniques and ancillary measures has increased the stature of surgical treatment for cancer of the larynx. One and two decades ago radiation therapy was the backbone of treatment for laryngeal cancer, but today it safely may be said that surgical therapy is on an equal plane. In addition to changes in attitude within the medical profession, lay education regarding esophageal voice training, and mechanical devices, such as the electrolarynx developed by Bell Laboratories, have acquainted the laity with the picture of a post-laryngectomy patient.

Today there are specific indications for recommending surgical treatment, and the purpose of this paper is to review a series of patients with laryngeal cancer, stressing clinical and histologic factors, in order to more directly specify the indications.

ANALYSIS OF MATERIAL

The present study included 63 patients with laryngeal cancer, 18 previously reported on in a special study⁸ and another 45 patients operated upon since then (Table 1). These patients, not selected in any way, were operated on at the Stanford University Hospital (now Presbyterian Medical Center) and Mount Zion Hospital in San Francisco and at the Veterans' Administration Hospital and the United States Naval Hospital in Oakland.

Twenty-one of the patients had had previous x-ray therapy and the lesions were recurrences. Of the 42 remaining patients, six had laryngectomy alone without further operation on the neck and 36 were treated by combined laryngectomy and unilateral radical neck dissection. In six of these 36, a secondary neck dissection was performed on the opposite side. No patient had contralateral node metastasis initially. Three patients, not included in the overall group, had laryngofissure (cordectomy) for small cord cancers.

In the 42 patients who were surgically treated initially, all had lesions that were over 1 cm. in size and were beyond the intrinsic stage alone by the time of operation. In some it was impossible to state the exact site of origin of the tumor due to its size and overgrowth of surrounding tissues.

Presented before the Section on Ear, Nose and Throat at the 90th Annual Session of the California Medical Association, Los Angeles, April 30-May 3, 1961.

• Improvements in the surgical treatment of laryngeal cancer by combined laryngectomy and radical neck dissection have given new importance to selection of the mode of treatment for various stages of disease at that site. To cast light on the subject, the cases of 63 patients with cancer of the larynx were reviewed. Twenty-one of them were operated on for recurrence after radiation therapy; and 42 were treated surgically at the outset, 36 of them having combined laryngectomy and radical neck dissection. In almost 80 per cent of the patients the lesion was extrinsic.

In the entire series, 51 patients had combined operations, and in 41 of them the cervical lymph nodes were positive for metastasis.

Reports in the literature also make note of a very high incidence of cervical node metastasis not only in cases of extrinsic cancer, but also in those in which the lesion is intrinsic.

Because of the frequency of cervical node spread, and its occult nature, choice between radiation and surgical operation must be made after candid, critical appraisal of the individual condition in each patient.

In almost 80 per cent of the cases in which the site could be determined, the cancer arose in extrinsic laryngeal structures.

In the entire series of 63 patients, 51 had combined laryngectomy and unilateral neck dissection; 41 (80 percent) had cervical lymph node metastasis. In six of these patients the opposite side of the neck was operated on by neck dissection secondarily, at the time an enlarged node was palpated, and in each of these metastasis was present.

In the majority of cases in this unselected series, the lesions were relatively advanced at the time of diagnosis; perhaps only one patient in five, at the most one in four, had limited lesions of the kind

TABLE 1.—Analysis of 63 Patients with Laryngeal Cancer

Total number of patients	63
Number with previous treatment, radiation therapy	21
Number initially treated surgically	42
Number treated with combined laryngectomy and radical neck dissection	36
Number with bilateral staged neck dissection	6
Laryngectomy alone	6
Size of lesion, over 1 cm.	42
Per cent with extrinsic cancers	80%
Per cent with cervical lymph node metastasis, 51 neck dissections	41 (80%)
Number with bilateral metastasis	6

that would be amenable to a form of therapy which can eradicate local disease.

Despite the relatively large size of the tumor on initial examination and the high incidence of cervical node metastasis, over half of the patients treated surgically at the outset were alive and well at the time of this report, between three and five years after operation. Among the survivors are three patients who had bilateral, staged neck dissections.

CHOICE OF THERAPY

In the past two decades a change has occurred with regard to the stage of development of laryngeal cancer at the time of diagnosis. In private practice it is relatively rare to see patients with intrinsic laryngeal cancer in an advanced stage. Patients who have persistent hoarseness for several weeks are quickly sent to a laryngologist who easily makes a diagnosis of early cancer of the intrinsic larynx and institutes therapy. The patients, however, who present more of a problem, and seem to be in the majority, are those with extrinsic laryngeal cancer. These lesions, because of their insidious life cycle, often attain large size before being diagnosed; and the incidence of them appears to be on the increase.

Successful therapy of laryngeal cancer depends on two factors: control of the primary lesion; and control of cervical lymph node metastasis. It is not difficult to eradicate the primary lesion when it is situated in certain locations and has certain attributes. When the cancer is intrinsic and limited to the vocal cords, or with only superficial involvement of the ventricular bands, the likelihood of cervical node metastasis is low and the problem is usually confined to the larynx. Such factors as ulceration, infection, fixation and size need to be taken into consideration, but when these are present to a limited extent only the cancer may still be restricted to an area which can be eradicated locally. It is lesions of that order that are best treated with x-ray therapy and a reasonably high survival rate can be expected. The advent of supervoltage therapy, which reduces morbidity and yet increases tumor dose without concomitant destruction of normal tissues, is a major step forward and enhances effective radiation therapy.

Decision regarding the method of therapy depends on an accurate evaluation of the extent of the disease. In a series of 137 cases of intrinsic laryngeal cancer reported by Martin¹ in 1946, 39 patients (28 per cent) had cervical lymph node metastasis and in only 21 of these cases was the primary tumor less than 1 cm. in size. Of 170 patients with extrinsic laryngeal cancer, also in Martin's report, 147 had cervical lymph node metastasis, an incidence of 87 per cent. In only 12

of these patients was the size of the primary lesion less than 1 cm. Orton,⁷ in discussing radical neck dissection for laryngeal cancer, made no mention of intrinsic lesions but considered only those "extensive laryngeal carcinomas involving the epiglottis, aryepiglottic fold, ventricle, subglottic area, pyriform sinus and the lateral wall of the pharynx." Of 55 patients reported by him, two with cord lesions, and eight with ventricular band tumors had cervical lymph node metastasis which occurred after laryngectomy. Reed^{9,10} noted that of 75 patients with cervical node metastasis 20, or 27 per cent, had true cord lesions, O'Keefe,^{5,6} reporting on 80 patients who had secondary neck dissections, noted that 11 had previous thyrotomy for cord lesions alone, and that in 20 to 30 per cent of patients with laryngeal cancer cervical node metastasis occurred following laryngectomy. He concluded that "the one-stage combined operation is positively indicated where cervical nodes are palpable at the time of initial operation, and relatively indicated where, because of the extent or position of the carcinoma, one suspects the presence of or anticipates the early development of cervical metastasis."

Recurrence after irradiation deserves special consideration. Certainly, if the lesion is resectable, operation should be performed. In some quarters the opinion is held that x-ray can be tried first, regardless of the location of the cancer, and if it fails operation can be used. Of the 21 patients so treated in the present series, 14 had postoperative fistulas, some requiring three to six months of complicated tube pedicle grafting to close. Sixteen had cervical lymph node metastasis to at least one side of the neck, and 15 died of cancer within three years. Mention should be made of slow healing and prolonged stay in hospital related to x-ray therapy, the likelihood of occult cervical node metastasis remaining untreated, and fatal hemorrhage (in two of the 21 patients treated) from rupture of radio-necrotic carotid arteries.

DISCUSSION

It is important to clarify, as well as possible, which patients with cancer of the larynx would be better treated surgically and which by radiation.

In 1955 the author⁸ reported on 18 patients with laryngeal cancer who were treated with combined, one-stage radical neck dissection and laryngectomy. The one factor common to these cases, in all of which there was lymph node metastasis, was involvement of some of the cartilaginous structures of the larynx—the cricoid, the arytenoids, the tracheal rings (subglottic) or the base of the epiglottis. The author believes that not only is the treatment of primary cancers such as these a surgical

problem per se, but that the lymphatic pathways and lymph nodes of the neck should be treated surgically at the same time. This concept can only be met by a combined operation. The use of radiation therapy to the larynx for these lesions not only entails risk of recurrence at the primary site but does not deal with possible lymphatic spread, which is of equal importance. A fact in point is that seven of the previously mentioned 15 patients with lymph node metastasis had been treated with radiation.

In addition to patients of the kind described in the preceding paragraph, there are others, with lesions arising on the cords or ventricular bands, who should be treated surgically. The size of the tumor, as has been mentioned by many other investigators,^{2,3} is an important factor, metastasis being much more likely from a tumor over 1 cm. in diameter than from a smaller one. Fixation, ulceration, cartilage necrosis, edema, infection and induration are signs of advancing disease and suggest that the problem may be no longer local. For patients with recurrence after radiation therapy, surgical operation is the only means of survival or even palliation.

Radiation therapy is best suited for more limited circumstances—for patients with smaller lesions, usually 1 cm. in diameter or less, lesions confined to a cord which is mobile and not complicated by edema, ulceration or induration. Patients with small, superficial cancers on the ventricular bands would likewise fall into the group considered for x-radiation, as well as other selected patients with limited lesions showing no evidence of cervical node metastasis. With the recent increases in early detection of

cancer, the number of patients meeting these criteria for irradiation is considerable.

No mention has been made of thyrotomy or cordectomy as a procedure. Indications for this operation vary,⁴ but in the author's opinion are narrowing. While it still has its place for a unilateral, small, movable cord cancer separate from the anterior commissure, a tumor which is only slightly larger and deeper than this requires more major effort to cure in the form of radiation, or even total laryngectomy. Supervoltage radiation, which leaves a stronger voice, and gives equally good results, seems preferable.

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CASE REPORTS

Intraperitoneal Oil Granuloma

OTTO J. TUSCHKA, M.D., Fresno

SEVERAL DECADES AGO there were numerous papers advocating the use of mineral and vegetable oil within the abdominal cavity to prevent the formation of peritoneal adhesions. In 1908 Blake¹ indicated that olive oil had a tendency to prevent adhesions and recommended its use in certain cases. Claypool² and Wilkie³ not only supported its use for the prevention of adhesions but also felt that the oil promoted subsequent drainage and peristalsis. Subsequent reports, however, indicated poor late results of this practice. Marshall and Farse⁴ reported operating on a patient who some 30 years previously had had a quantity of sterile liquid paraffin put into the abdominal cavity to prevent the adhesion of loops of intestines to the tubes in a case of salpingitis. Norris and Dawson⁵ reported two cases of peritoneal reaction to liquid petroleum. Both reports described typical granulomatous foreign body reaction of the peritoneal surfaces.

Descriptions of the tissue reaction to mineral substances such as talc and beryllium oxide have appeared in recent medical literature, but because contamination of the peritoneal cavity with mineral or vegetable oils is now fairly rare, little has been said of it in the past few years.

REPORT OF A CASE

A 26-year-old man, a laboratory technician, awoke in the middle of the night with generalized cramping abdominal pain and vomiting. By morning the pain had become steady and was localized in the lower abdomen. The patient had had pneumonia repeatedly in early life, beginning at one year of age. At age 12, he was examined at an institution for tuberculous patients and was thought to have congenital lung cysts on the right. Attempts were made to keep the lung collapsed with pneumothorax, and this was successful until the space was lost. A phrenic crush was then done and mineral oil was placed in the right lateral chest for permanent collapse of the lung. The patient had been fairly well since that time. He said that he had had no previous

abdominal discomfort or indigestion. On the day the abdominal pain began, there was no fever.

Upon physical examination some tenderness was noted in the lower abdomen, but it did not seem severe or localized. There were no masses and peristalsis was very active. A hard, fixed, nontender mass was felt in the cul de sac on rectal palpation. No abnormality was observed on sigmoidoscopic examination. X-ray films of the chest showed no change from those taken previously. An abdominal film revealed many areas of calcification of various sizes and density, distributed irregularly throughout the abdomen (Figure 1). The distribution of gas in the bowel was normal. Results of examination of the blood and urine were within normal limits.

At laparotomy, it was found that the visceral and parietal surfaces of the peritoneum were studded with white nodules, varying in size from 4 cm. to a few millimeters, some pedunculated and some



Figure 1.—Roentgenographic appearance of calcified intraperitoneal oil granulomas.

Submitted February 13, 1961.

plaque-like on the serosal surfaces. There were so many adhesions that the abdominal cavity and pelvis could not be thoroughly explored and the cecum was buried in adhesions so dense that the appendix could not be identified. There was no evidence of intestinal obstruction. The gross appearance of the abdomen was that of extensive carcinomatosis. Since the process was so widespread, it was obvious that nothing definitive could be done, and therefore, two of the pedunculated nodules were removed for biopsy.

The microscopic report was as follows: "This is a lipidic granuloma, having a structure like that of the so-called paraffinomas. The clear spaces represent oil droplets, from which the oil has been removed by solvents. Each droplet is surrounded by a thin layer of foreign body giant cells. It seems reasonable to relate the presence of this oil to the earlier oleothorax. The distribution suggests that the oil reached the peritoneal cavity directly rather than by distribution in the lymphatic system."

The patient had no abdominal symptoms in the next several years of observation. Apparently, unless obstructive phenomena develop through pressure or adhesions, these granulomatous masses do not adversely influence the prognosis.

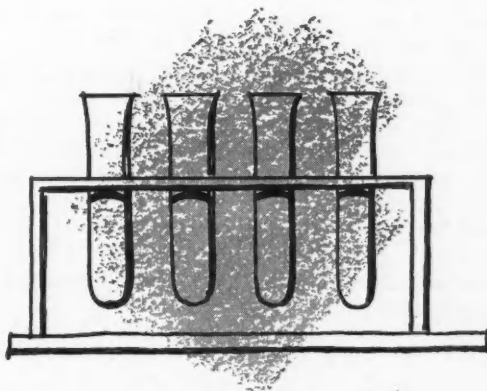
SUMMARY

Foreign material when deposited in the tissue, either from exogenous or endogenous sources, may stimulate a granulomatous response which is proliferative and causes nodule formation. When this reaction occurs on the surfaces such as the peritoneum, it is often grossly indistinguishable from widespread carcinoma or tuberculosis. The case presented is one in which, apparently, oil had been inadvertently introduced into the abdominal cavity. The ensuing typical reaction produced a confusing gross appearance resembling extensive carcinomatosis.

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California MEDICINE

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EDITORIAL

The A.M.A. Meeting

ONCE AGAIN the American Medical Association has completed the current version of what has come to be known as the "greatest medical meeting on earth," the Annual Session. And once again new records were set in attendance and number of exhibits in this the largest and probably best scientific medical meeting ever held.

More than 56,000 registrants attended the meeting. They attended outstanding symposia, reports of recent research and reviewed some 700 scientific and industrial exhibits, many of which captivated not only physicians but the nation's press in their display of imagination, ingenuity and technical and professional skill. Modern therapy encompasses so many skills that each new development of technique and equipment necessarily engages the attention and admiration of those who view it.

On the business side of the meeting, the House of Delegates considered 115 resolutions and 28 reports, again a record number. The meetings and committee hearings of the House commanded the attention of the California delegation, which this year tied with New York in representation, having 18 delegates. Since the scientific developments of the meeting will be reported elsewhere in the months to come, the immediate concern of members of the California Medical Association should be with the decisions of the House of Delegates.

These decisions were most pleasing to the California delegates in that they followed the lines of various proposals emanating from the C.M.A. meeting earlier this year.

This was particularly true in the case of the proposed integration of the medical and osteopathic professions in California. Three resolutions on this subject came before the House of Delegates, as did the report of the Judicial Council of the A.M.A. and a second report from a special committee that was

set up two years ago to provide liaison with the American Osteopathic Association.

The liaison committee reported, in effect, that it saw no chance for progress in its dealings with the national osteopathic committee, that its work was done and it should be discharged and that any decisions on the parallelism or differences in medicine and osteopathy must be decided by the House of Delegates. The reference committee reviewing this report accepted these recommendations.

The reference committee then went further and adopted a statement of policy with regard to osteopathy; this statement was then approved by the House of Delegates.

This statement, which fits in closely with the philosophy followed in California in recent agreements with the California Osteopathic Association, points out that there has been a transition in osteopathy over the years and that today in many areas osteopathic medicine and surgery follows accepted medical lines and that the differences between the two professions have been largely eliminated. Where this has occurred, the statement holds, proper evaluation of similarities and differences should be made at state level. Where osteopathy has not made this transition, the established rules of ethical conduct must apply and must continue to proscribe voluntary professional association with those who are still considered to be cultists.

In the words of the statement, "The test now should be: Does the individual doctor of osteopathy practice osteopathy or does he in fact practice a method of healing founded on a scientific basis? If he practices osteopathy, he practices a cult system of healing and all voluntary professional associations with him are unethical. If he bases his practice on the same scientific principles as those adhered to by members of the American Medical

Association, voluntary professional relationships with him should not be deemed unethical."

Here, for the first time, is a true guide which physicians may follow where the determination of cultism has not been made by the state association. Here is complete authorization for the California agreement to be consummated without fear or chance of criticism on ethical grounds.

Another committee report of great interest was that of a special committee which has worked for two years to strengthen the profession's disciplinary controls over its members. The report, accepted by the House, calls for original jurisdiction to be lodged in the A.M.A. when a member has violated the ethical principles, even though action may not have been taken against him in his own state. It also urges the use of county society committees as "grand juries" to initiate action against erring members. A further recommendation was that the medical schools develop and give courses in ethics and in socio-economic principles of medicine.

This set of recommendations, adequately applied, would be most valuable in preventing or stopping unethical acts by physicians who might feel free to dare the present disciplinary procedures.

In the field of communications, the House voted to establish a committee of seven of its members "to study and continually advise the Board of Trustees on the broad planning and coordination of all phases of communications. . . ." This came from a California resolution and met with approval from all quarters.

Another important resolution introduced by California called for establishment of a committee de-

signed to study and review the responsibilities of the A.M.A. Board of Trustees and to consider the advisability of enlarging the Board and altering the terms of office of trustees. A report will be given by this committee at the Denver meeting late in November.

These are some of the more important decisions reached in New York on California proposals. Actions on all business of the House of Delegates were printed in the *Journal of the American Medical Association* for July 10, 1961. A summary prepared by Ed Clancy, director of public relations of the California Medical Association, is printed in this issue of CALIFORNIA MEDICINE, beginning on page 123.

In its elections the House of Delegates selected Doctor George M. Fister of Ogden, Utah, as President-Elect. It filled three vacancies on the Board of Trustees with Doctors Wesley W. Hall of Reno, Homer L. Pearson of Miami and Charles L. Hudson of Cleveland, the last-named to fill an unexpired term by reason of death. Among the important council posts, two Californians were honored, Doctor Robertson Ward with reappointment to the Judicial Council and Doctor Dwight L. Wilbur with election to the important Council on Medical Education and Hospitals.

From a California as well as a national point of view, the decisions reached at the New York meeting were of great importance and most satisfying. Together, these decisions will help the medical profession along the way to the best in medical service for all people. California may well be proud that its representatives had such a large part in the conclusions reached.



The President's Page



"Cadillac" Medicine

"Good things cost less than bad ones."

ITALIAN PROVERB

PERHAPS NO GROUP in a society might so easily distort quality or suppress errors as the members of the healing arts. Medicine has long recognized this test of its fiber and has created an elaborate and strict code of ethical conduct to discipline itself. Although this code is still an essential moral stabilizer in the profession, it is apparent that the enlightened American society of today needs more palpable evidence of quality.

Physicians have made great strides in establishing "internal controls"—such as tissue committees, privilege committees, mediation committees and, more recently, hospital-physician usage committees. Unfortunately the evidences of professional self-responsibility are still often not known or understood or appreciated by the public. Basing his judgment on the everyday lessons of life, the citizen feels that occult professional self-discipline may be rather empty or at least suspect, especially in its more subtle tones.

This suspicion is probably greatest at that penumbra of medical services called "quality." From the practical point of view of the average man, there is probably one paramount reason why he is willing to vote for physicians to remain outside of the govern-

ment—his fear of deterioration of quality in medical care should the system change.

At the time of a crisis in illness, each American wants for himself the best opportunity to return to health. He demands that he receive "Cadillac" medicine. He wants excellence, efficiency, flawlessness. Where these are the paramount ingredients the best is wanted and the cost is better understood and can be planned for.

Without quality assurance, medicine is too costly at any price. Medicine must keep quality foremost and devise ways to let the people understand what quality is, and to recognize it. This must be so regardless of the patient's financial resources. The patient must know that the office visits or hospital days are justified; he must be assured that the procedure is necessary, the drugs needed and the professional service excellent. This can be achieved by advertised and enlightened self-discipline, rigorous attention to honesty and, I believe, ultimately by participation of some carefully selected, responsible lay citizens in certain key committees. Has your society appointed a committee or reviewed its effectiveness in this critical area recently? If not, why not suggest it?

Harold B. Smith, M.D.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

The A.M.A. Meeting

This "news and comment" report on the recent annual meeting of the American Medical Association was written by Mr. Ed Clancy, director of public relations of the California Medical Association.

LIKE THOSE at the recent meeting of the members of the House of Delegates of the California Medical Association, the delegates to the 110th Annual Meeting of the American Medical Association, June 25-30, 1961, at New York City, set a new record by action on 115 resolutions and 28 reports.

The growing volume, among other things, indicates the American doctors' increasing concern over a variety of matters revolving around the health care and welfare of the people of the United States; the maintenance of quality care while shielding the public against the inherent dangers in changing the control of the type and quality of care from the individual physicians to a bureaucracy.

The delegates also interested themselves in osteopathy, in better communications within the profession, in relations with other professions and in a variety of organizational matters.

In all these discussions the California delegation played an important part, and many times took the leadership in determining policies for American medicine.

Probably the most significant reason for all this is that the delegates are informed, they do their "home work" in advance of the meeting and they work at the convention.

Even before the delegation gathered in New York City, Dr. Dwight L. Wilbur, chairman, called a San Francisco meeting to formulate plans.

Then each day in New York a breakfast caucus was held promptly at 7:30 a.m. to review the matters to be decided at the reference committees and the meetings of the House.

Despite the humdrum and the monotonous attention to detail involved in considering such a volume

of resolutions, American medicine's determination to be free rang clear and loud above it all.

Shortly before the convention convened, the New York *Daily News* voiced violent objections to the San Francisco speech made by Abraham A. Ribicoff, Secretary of Health, Education and Welfare.

"Better Fight, Doctors," warned the *News*, and then continued:

"Throughout Ribicoff's speech, one could detect a veiled threat that, if the doctors don't play along with the politicians in furnishing more and more 'free' medical service, the politicians will take over the doctors.

"If that ever happens, the quality of medical service in this country will sink to Soviet Russian levels or below, and its costs—paid by the taxpayers—will go higher every year. The service won't be free, and it won't be good, and a lot of our best young minds will be frightened away from going into medicine.

"All this is an urgent cue to the doctors to fight the Kennedy Administration's Socialist medicine plans at least as fiercely as the American Medical Association has fought all other schemes, down the years, to chain the medical profession to the Wash-

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ington bureaucrats' high-rolling and free-wheeling chariot.

"In thus resisting these projects, the A.M.A. is fighting, not only to protect the doctors' independence, but also to maintain and constantly improve the quality of U. S. medical service, and to safeguard the best interests of all of us, sick or well."

The physicians certainly took heed of this storm signal flown by the newspaper with the largest circulation in America.

Before the convention ended, the delegates had given their approval to this "fight talk" by amending a report to the Reference Committee on Legislation and Public Relations dealing with opposition to the King-Anderson proposal for social security care of the elderly.

The amendment, introduced by Dr. Louis H. Bauer, former A.M.A. president and passed by a unanimous vote, stated:

"The House of Delegates of the American Medical Association records its opposition to any legislation of the King-Anderson type. Its opposition is based on the facts that such legislation does not meet the needs of the situation; interferes with the doctor-patient relationship; interferes with the rights of doctors employed in hospitals; is inordinately expensive; leads inevitably to further encroachments by government into medical care; results eventually in a deterioration of the type of medical care rendered the public; and is therefore detrimental to the public interest.

"The House of Delegates invites attention to the fact that the medical profession is the only group which can render medical care under any system and that the medical profession is best qualified to determine how the best medical care can be delivered.

"The House of Delegates believes that the medical profession will see to it that every person receives the best available medical care regardless of his ability to pay, and it further believes that the profession will render that care according to the system it believes is in the public interest and that it will not be a willing party to implementing any system which we believe to be detrimental to the public welfare."

California and three other states had resolutions dealing with medicine's image and its interpretation to the public by the A.M.A. executives.

The result was the passage of a combined statement which calls for the setting up of a seven-man committee from members of the House. In all probability a Californian will be on this committee "to study and continually advise the Board of Trustees on the broad planning and coordination of all phases of communications of the American Medical

Association, so that the public and the members of the medical profession are properly and adequately advised of the policies and concern of the medical profession with respect to all phases and aspects of medical care for all people. . . .

"That we have a very adequate Division within the A.M.A. capable of implementing any program of communications. The Communications Division of the A.M.A. needs the active support and cooperation of the House and of all members of the Association."

Along this "image problem" or whatever you wish to call it, may I suggest you get the July 7 issue of *Time* magazine and see how you and your American Medical Association are reported to your patients—your public. In the article, American medicine's position, I believe, is presented forcefully and well. Page one calls attention to higher costs, but it quickly adds "*Better Medicine*."

And, of course, the opinions of the "vocal minority"—some of them it seems are always from California—are reported also.

The most lengthy discussions in the House revolved around the Judicial Council's report, Osteopathy and resolutions from several states.

Practically all speakers complimented California on its solutions aimed at the eventual amalgamation with medicine.

Our position was explained by Warren L. Bostick, C.M.A.'s President and floor spokesman for the delegation.

Since the important decisions will be referred to many times during the coming years, they are reported in full.

A.M.A.'s policy for the nation is as follows:

"1. There can never be an ethical relationship between a doctor of medicine and a cultist, that is, one who does not practice a system of healing founded on a scientific basis.

"2. There can never be a majority party and a minority party in any science. There cannot be two distinct sciences of medicine or two different, yet equally valid systems of medical practice.

"3. Recognition should be given to the transition presently occurring in osteopathy, which is evidence of an attempt by a significant number of those practicing osteopathic medicine to give their patients scientific medical care. This transition should be encouraged so that the evolutionary process can be expedited.

"4. It is appropriate for the American Medical Association to reappraise its application of policy regarding relationships with doctors of osteopathy, in view of the transition of osteopathy into osteo-

pathic medicine, in view of the fact that the colleges of osteopathy have modeled their curricula after medical schools, in view of the almost complete lack of osteopathic literature and the reliance of osteopaths on and use of medical literature, and in view of the fact that many doctors of osteopathy are no longer practicing osteopathy.

"5. Policy should now be applied individually at state level according to the facts as they exist. Heretofore, this policy has been applied collectively at national level. The test now should be: Does the individual doctor of osteopathy practice osteopathy, or does he in fact practice a method of healing founded on a scientific basis? If he practices osteopathy, he practices a cult system of healing and all voluntary professional associations with him are unethical. If he bases his practice on the same scientific principles as those adhered to by members of the American Medical Association, voluntary professional relationships with him should not be deemed unethical."

California's resolution favoring plans for broad coverage health insurance programs to stem governmental intervention received the unanimous endorsement of the reference committee and the voting delegates.

The resolved portions stated:

"That the Board of Trustees of the American Medical Association be commended for its activities in studying and developing plans for broad coverage health insurance in cooperation with the American Hospital Association and the Blue plans; and

"That the Board of Trustees accelerate its activities on this problem and also hold joint meetings with representatives of commercial insurance underwriters and of other interested groups in developing standardized types of broad coverage medical care insurance which can be made available nationally."

Feeling that the nine-man Board of Trustees should be enlarged to probably 15 members, the California delegation entered a resolution for study of the subject.

The resolution, practically as introduced, declared:

"That the Speaker of the House of Delegates appoint an ad hoc committee consisting of five elected members of the House of Delegates to study and review the responsibilities of the Board of Trustees and to recommend whether or not the present Board of Trustees should be enlarged and whether any change should be made in the terms of office of trustees as presently stated in the Association's Constitution and By-laws; and

"That this ad hoc committee report to the House of Delegates in Denver in November, 1961."

Texas physicians introduced a resolution in oppo-

sition to the compulsory use of generic names in prescribing drugs.

In approving it the House declared:

"The sponsors of this resolution emphasize that this does not mean that physicians should not use generic names, but they oppose the compulsion inherent in this kind of proposal."

On disciplinary matters, a report accepted by the House urged state and county medical societies to utilize public service committees (grievance committees) as "grand juries" to initiate action against an offender so as to obviate the necessity of making an individual member of a medical society complain against a fellow member.

In a long overdue move the House suggested that each medical school develop and present a required course in ethics and socioeconomic principles, and that each state board of medical examiners include questions on ethics and proper socioeconomic practices in all examinations for license.

The report concluded with a recommendation that "American medicine at the national, state and local level maintain an active, aggressive and continuing interest in medical disciplinary matters so that, by a demonstration of good faith, medicine will be permitted to continue to discipline its own members when necessary."

The House strongly endorsed a Board report which pointed out the problems that would result from amending the Food, Drug and Cosmetic Act to authorize the Food and Drug Administration to determine the efficacy, as well as the safety, of a prescription drug prior to the approval of a new drug application. The A.M.A. will oppose such legislation before the Kefauver Committee, the report pointed out, on the basis that "a decision with respect to the effectiveness of drugs is dependent upon extended research, experimentation and usage." The House agreed that vesting such authority in the Food and Drug Administration would operate to limit research, the marketing of drugs and the exercise of discretion by the medical profession. "The marketing of a relatively useless drug is infinitely less serious than would be the arbitrary exclusion from the market of a drug that might have been lifesaving for many persons," the House declared.

Eight resolutions were introduced on the subject of creating new two-year residency training programs in general practice. The combined substitute resolution directing the Council on Medical Education and Hospitals to consider for approval other two-year programs in general practice which incorporate experience in obstetrics and surgery, was passed. The Council will review these programs on the basis of their individual merits and conduct a long-range evaluation of the new programs as well

as the previously established Family Practice Programs.

The House accepted a reference committee suggestion for establishment of a new Commission to Coordinate the Relationships of Medicine with Allied Health Professions and Services.

The commission will be composed of seven members appointed by the Speaker of the House. Subcommittees, composed of from three to five members selected by the commission from lists of names submitted by the scientific sections, will consider problems in specific areas.

The commission will correlate and catalogue the reports of the subcommittees and will act as liaison agent between the subcommittees and those A.M.A. Councils where there may be overlapping interests.

The House approved a report by the Council on Drugs on the present status of poliomyelitis vaccination in the United States and urged that it be made available to all physicians through the most effective communications media. The report clearly outlines procedures recommended for implementation of mass vaccination with the new oral vaccine when it becomes available. The House complimented the Council on its "clear and succinct statement on the initiation of the new campaign which will be needed to promote the new vaccine." The House agreed that the report provides the practicing physician with a reliable series of answers to the many questions which will arise during the change-over from Salk vaccine to oral vaccine. The report emphasizes, however, that "physicians should encourage, support and extend the use of Salk vaccine on the

widest possible scale at least until the oral poliovirus vaccines currently under development and clinical trial become available."

And, proving that the Board of Trustees is not always in touch with the "electorate," a recommendation to hold the 1963 Clinical Session in Las Vegas was overruled.

The more sober-minded delegates with Dr. Donald A. Charnock, a past C.M.A. president, leading the opposition, pointed out that the gambling capital of the nation was hardly the place to hold a convention of the leaders of American medicine.

After voting "no dice" for Las Vegas, the delegates then selected Portland, Oregon.

The inaugural ceremonies saw Dr. Leonard W. Larson, North Dakota, assume the presidency of A.M.A.

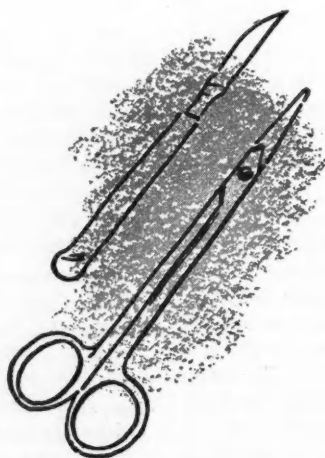
Dr. George M. Fister, Utah, a member of the Board of Trustees, was named president-elect.

Three new men assumed positions on the Board of Trustees. They are Drs. Wesley W. Hall, Nevada; Homer L. Pearson, Florida, and Charles L. Hudson, Ohio.

Dr. Robertson Ward, San Francisco, was renamed to the Judicial Council.

Dr. Wilbur was high man in a field of three candidates to take over the expired term of Dr. John W. Cline on the important Council on Medical Education and Hospitals.

Nearly 23,000 physicians from the fifty states were in attendance.



In Memoriam

BABCOCK, RAYMOND ARTHUR. Died in Willits, June 6, 1961, aged 71. Graduate of Hahnemann Medical College of the Pacific, San Francisco, 1912. Licensed in California in 1913. Doctor Babcock was a member of the Mendocino-Lake County Medical Society.

ENGELHORN, HAROLD MILTON. Died in Campo, May 2, 1961, aged 48, of heart disease. Graduate of the University of Southern California School of Medicine, Los Angeles, 1939. Licensed in California in 1939. Doctor Engelhorn was a member of the San Diego County Medical Society.

FRIEDMAN, HARRIS ALVAN. Died June 24, 1961, aged 35. Graduate of Northwestern University Medical School, Chicago, Illinois, 1948. Licensed in California in 1953. Doctor Friedman was a member of the Los Angeles County Medical Association.

HEWITT, REUEL EDWARD. Died in West Sacramento, June 12, 1961, aged 59. Graduate of State University of Iowa College of Medicine, Iowa City, 1925. Licensed in California in 1957. Doctor Hewitt was a member of the Placer-Nevada-Sierra County Medical Society.

HOLLEY, CHARLES A. Died in Los Angeles, June 17, 1961, aged 47. Graduate of Howard University College of Medicine, Washington, D. C., 1939. Licensed in California in 1946. Doctor Holley was an associate member of the Los Angeles County Medical Association.

JOHNSON, RICHARD PHILIP. Died in San Leandro, June 18, 1961, aged 51 of a coronary occlusion due to coronary arteriosclerosis. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1936. Licensed in California in 1936. Doctor Johnson was a member of the Alameda-Contra Costa Medical Association.

KLEINBERG, IRMGARD. Died in Los Angeles, April 6, 1961, aged 44, of a massive cerebral hemorrhage. Graduate of Latvijas Universitate Medicinas Fakultate, Riga, Latvia, 1941. Licensed in California in 1955. Doctor Kleinberg was a member of the Los Angeles County Medical Association.

LINDSLEY, ST. CLAIRE RANSFORD. Died June 23, 1961, aged 79. Graduate of the University of Oregon Medical School, Portland, 1923. Licensed in California in 1925. Doctor Lindsley was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

MARSHALL, HAROLD K. Died in Charlottesville, Virginia, June 25, 1961, aged 61, of a coronary occlusion. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1926. Licensed in California in 1931. Doctor Marshall was a member of the Los Angeles County Medical Association.

MCDONALD, FRANK JAMES. Died in Monterey, January 16, 1961, aged 62, of pneumonia. Graduate of the University of Colorado School of Medicine, Denver, 1934. Licensed in California in 1936. Doctor McDonald was a member of the Monterey County Medical Society.

PALLAIS, ARTURO. Died May 6, 1961, aged 85. Graduate of Universidad Nacional de Guatemala Facultad de Ciencias Medicas, Guatemala, 1900. Licensed in California in 1919. Doctor Pallais was a member of the Los Angeles County Medical Association.

PALMER, JOSEPH A. Died June 16, 1961, aged 53. Graduate of New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1936. Licensed in California in 1947. Doctor Palmer was a member of the Los Angeles County Medical Association.

POTTENGER, FRANCIS MARION, SR. Died in Los Angeles, June 10, 1961, aged 91. Graduate of Cincinnati College of Medicine and Surgery, Ohio, 1894. Licensed in California in 1895. Doctor Pottenger was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

SENELICK, MARIUS D. Died June 14, 1961, aged 70. Graduate of the University of Illinois College of Medicine, Chicago, 1915. Licensed in California in 1942. Doctor Senelick was a member of the Los Angeles County Medical Association.

STEVENS, WILLIAM E. Died in San Francisco, February 23, 1961, aged 83, of arteriosclerotic heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1899. Licensed in California in 1900. Doctor Stevens was a member of the San Francisco Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

USOW, JOHN MAURICE. Died June 14, 1961, aged 52. Graduate of Marquette University School of Medicine, Milwaukee, Wisconsin, 1934. Licensed in California in 1943. Doctor Usow was a member of the Los Angeles County Medical Association.

VOIGHT, CHRISTIAN E. Died in San Francisco, June 19, 1961, aged 76. Graduate of Georg-August-Universitat Medizinische Fakultat, Gottingen, Prussia, Germany, 1925. Licensed in California in 1926. Doctor Voight was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

WYATT, BERNARD L. Died in Las Vegas, Nevada, June 22, 1961, aged 77. Graduate of New York University College of Medicine, New York, 1905. Licensed in California in 1920. Doctor Wyatt was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

ANNUAL MEETING

Fairmont Hotel
SAN FRANCISCO

April 15-18, 1962

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) no later than November 1, 1961.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 693 Sutter Street, San Francisco 2, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than November 1, 1961. (No exhibit shown in 1961, and no individual who had an exhibit at the 1961 session, will be eligible until 1963.)

Medical Motion Pictures

The Film Symposiums which attracted excellent attendance in 1961 will be continued in 1962.

Authors desiring to show films should send their applications to Motion Picture Division, C.M.A., 693 Sutter Street, San Francisco 2. All authors are urged to be present at the time of showing as there will be time allotted for discussion and questions from the audience after each film.

Deadline: December 1, 1961.

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY Jerome J. Sievers
4835 Van Nuys Boulevard, Sherman Oaks

ANESTHESIOLOGY Grant Fletcher
P. O. Box 569, Monterey

DERMATOLOGY AND SYPHILOLOGY . . . David R. Taylor
1237 R Street, Fresno 21

EAR, NOSE AND THROAT Henry L. Harris
3875 Wilshire Boulevard, Los Angeles 5

EYE Richard A. Westsmith
12 North El Camino Real, San Mateo

GENERAL PRACTICE A. Norton Donaldson
321 West Washington Avenue, Santa Ana

GENERAL SURGERY R. Bruce Henley
400 Twenty-Ninth Street, Oakland 9

INDUSTRIAL MEDICINE AND SURGERY . . Peter L. Hoffman
3533 West Pico Boulevard, Los Angeles 19

INTERNAL MEDICINE Glenn A. Pope
2600 Capitol Avenue, Sacramento 16

OBSTETRICS AND GYNECOLOGY . . . Kenneth F. Morgan, Jr.
2010 Wilshire Boulevard, Los Angeles 57

ORTHOPEDICS Albert H. Rodi
2010 Wilshire Boulevard, Los Angeles 57

PATHOLOGY AND BACTERIOLOGY . Carl M. McCandless, Jr.
St. Joseph's Hospital, Buena Vista and Park Hill, San Francisco 17

PEDIATRICS R. Bruce Jessup
2151 Berkeley Way, Berkeley 4

PHYSICAL MEDICINE Karl H. Haase
Wadsworth General Hospital, V. A. Center, Los Angeles 25

PREVENTIVE MEDICINE AND
PUBLIC HEALTH Irving D. Litwack
2655 Pine Avenue, Long Beach 6

PSYCHIATRY AND NEUROLOGY . . . { Mark Zeifert
Henry S. Colony
Psychiatry: Mark Zeifert, 1065 S Street, Fresno 21
Neurology: Henry S. Colony, 411 Thirtieth Street, Oakland 9

RADIOLOGY Robert L. Scanlan
2131 West Third Street, Los Angeles 57

UROLOGY August Spitalny
3637 California Street, San Francisco 18

Maternal MORTALITY REPORTS

These case reports are taken from the files of the State Department of Public Health which, together with the California Medical Association, now sponsors the statewide studies of all maternal mortalities. Selected cases are here presented from time to time as a matter of interest and illumination to all physicians concerned with the practice of obstetrics. They are prepared by the Committee on Maternal and Child Care. It is hoped that a review of such significant cases will help to improve the welfare of future California mothers.

CASE NO. 4

THE PATIENT was 37 years of age, gravida 3, para 2. Her first pregnancy had been complicated by several episodes of vaginal bleeding and had terminated four weeks prematurely. The second pregnancy terminated with cramps and bleeding at the twenty-second week. Five years before her death the patient had had a dilatation and curettage for irregular uterine bleeding.

During the third pregnancy, the patient had two episodes of vaginal bleeding, one in the sixth month and one in the seventh. The second of these episodes led to admittance to hospital, and an obstetrical consultant there made a provisional diagnosis of a low-lying placenta or marginal placenta praevia (although the report notes no specific investigative techniques to confirm this). The consultant advised bed rest and careful observation and recommended that blood for transfusion be available. When the bleeding ceased in 24 hours, the patient was discharged from the hospital.

At the thirtieth week of pregnancy, the patient was admitted to the hospital in active labor and with ruptured membranes. The nurse's notes indicate that there was "quite heavy" bleeding at the time of admission, and this apparently continued during the two hours of labor required to accomplish spontaneous delivery of a child weighing 2 pounds 15 ounces. The records also indicate excessive bleeding during the delivery. The placenta was described as being delivered intact.

Shortly after delivery, the patient was transferred from the delivery room to a ward bed, where she was given ergonovine intravenously and one ampule of a vitamin K preparation. Intravenous infusion of 1,000 ml. of 5 per cent glucose solution was started. Again according to the nurse's notes, the patient continued to bleed heavily after the departure of the attending physician. He was called and returned about three hours after delivery, but the patient died one hour later—four hours postpartum.

There is no record of any order in the chart for crossmatching or for transfusion at any time. There is no record of any pelvic examination being done during the postpartum bleeding. The cause of death is stated on the death certificate as "Exsanguination due to retained placental fragment." Presumably, the secondary diagnosis was established by autopsy, but a copy of the autopsy report was not forwarded with the Maternal Mortality Study report.

COMMENT

The errors of omission in this case are blatantly obvious. Both the previous history and the conditions observed in the third pregnancy gave ample warning of the likelihood of the presence of a gravely dangerous hemorrhagic complication of pregnancy. Yet this warning was totally ignored at the time of her admission in labor and during her six hours of subsequent life—in the face of an obstetrician's recommendation during a previous bleeding episode that blood for transfusion be available. Apparently the extent of hemorrhage during the short labor and the delivery was either ignored or grossly underestimated. When the heavy bleeding continued postpartum, the patient was removed from the delivery room, although that is where the most efficient care could have been rendered. No attempt was made to determine the site of or the reason for the excessive bleeding; and the possibilities for both were multiple in this case. On hindsight, one judges that the patient's life might have been saved had simple intrauterine exploration (made virtually mandatory by the persistent postpartum hemorrhage) been carried out. Finally, when all indications were for blood transfusion, there had been at no time even an order for crossmatching. In this day of widely-distributed blood banks, failure to call upon their life-saving supplies for patients such as this one is still far too frequent. Herein lies the major reason why hemorrhage continues to be the number one killer of postpartum mothers.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, M.D., M.P.H.
Director, State Department of Public Health

ALTHOUGH the reported incidence of paralytic poliomyelitis in California continues to be low, there remains the ever-present threat of an outbreak in the remaining groups of unvaccinated persons.

In communities where surveys have shown that the immunization level is dangerously low, the local health departments, medical societies and the National Foundation have recommended that volunteer community poliomyelitis vaccination clinics be organized. These nonprofit clinics are staffed by health department personnel, along with volunteer physicians, nurses and lay workers from the Parent-Teacher Association and other groups.

No major radiation safety problems were revealed by a protection survey of the medical and dental x-ray equipment used by the State Department of Corrections. At the request of the Department of Corrections, radiation protection surveys were conducted at Deuel, Corona, Chino, Folsom, Soledad, Las Padres and Tehachapi. Some 34 x-ray machines were surveyed.

Although no major radiation safety problems were found, a number of recommendations were made designed to bring equipment, facilities and practices to levels consistent with reducing radiation exposures to the lowest practicable amount.

A long range policy for water supply and sewage disposal in the entire Tahoe Basin was considered at a meeting in Tahoe City by representatives of state and local health departments from California and Nevada, the Interstate Compact Commission, State Department of Water Resources and Water Pollution Boards.

The meeting was called by the Lake Tahoe Area Council to brief its recently retained board of consulting sanitary engineers on existing state policies and the views of official departments regarding these problems.

The State Health Department stressed the importance of protecting the surface waters of the basin from the damaging impact of sewage or sewage effluent; taking into account not only the public health implications of such discharge, but the total spectrum of adverse effects on the quality of water in Lake Tahoe and the surface streams that would result from the discharge of wastes containing a high concentration of plant nutrients and other dissolved or suspended organic materials.

We also recommended that in addition to the two alternatives of land disposal and pumping effluent from the basin, which are under study by the consulting board, consideration be given to complete reclamation of water from sewage by storage of treated sewage for periods of approximately one year in a system of man-made impoundments not used by the public.

Tehama County has become the twelfth county to contract with the department for public health services. This means that 25,450 more Californians will benefit from public health programming designed to meet their needs in preventive medical services and sanitation.

Legislation adopted in 1953 authorized the State Health Department to participate with the governing bodies of counties of less than 40,000 population in a partnership agreement providing for the development and administration of basic public health services.

Other counties served through the Bureau of Public Health Contract Services are: Alpine, Amador, Calaveras, El Dorado, Lake, Mariposa, Modoc, Mono, Nevada, Sierra, and Trinity. The citizens of Glenn, Lassen, Tuolumne, and Siskiyou Counties are yet without local organized public health programs. These four counties contain less than 0.5 per cent of California's population.



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

WHY IS IT NECESSARY to "entertain" physician's wives in order to lure them to a meeting of the Woman's Auxiliary? Not too many years ago our programs were concerned mainly with the problems of the medical profession. Nowadays, the Auxiliary's projects in Legislation, Public Relations, Community Service, Nurse Recruitment, Health Careers, etc., are fed to the members in small capsules—the smaller, the better it is believed. The trend is to fashion shows, interior decorators and entertainment of all kinds.

Whose fault is it that this situation exists? Not completely the Auxiliary's. Many physicians do not believe in the work of the Auxiliary. They are blind to the necessity of a physician's wife's being fully educated, and aware of the stand taken by the county medical society on all phases of medical legislation, of the society's stand on local, state and national issues. More questions are asked of a physician's wife over a bridge table, in the beauty parlor, at the market and in other meetings about the pros and cons of any subject concerned with medicine, or hospitals, or doctors than are ever asked of the physician himself.

If every physician would insist that his wife be a member of the Woman's Auxiliary and attend the meetings, the women would be a powerful force in the field of public relations. How else can we answer the questions put to us, sometimes in a friendly and sometimes in a very unfriendly way? How can we answer for our husbands unless we know their stand on the questions being asked? How can we know what the questions might be until they are brought to our attention at the Auxiliary meeting—and along with them answers?

The swing from all serious to all entertainment is over. There are too many forces working against the best interests of good medical practice for us wives not to be concerned with knowing the answers. It is up to you men to supply the answers and see that your wives are at the meetings to get them. The Auxiliary will see that they get all the information possible—along with some fun and entertainment. A woman can swiftly spread information. Let us be sure she has the right information.

MRS. LYLE F. MURPHY
*Second Vice-President
Program Chairman
Woman's Auxiliary to the
California Medical Association*

INFORMATION

C.P.S.—Its Strengths and Weaknesses

The following, a supplement to the annual report of the Board of Trustees of California Physicians' Service that was published in the March 1961 issue of CALIFORNIA MEDICINE, was delivered at the 1961 Annual Session of the House of Delegates by Dr. John G. Morrison, chairman of the board.

CALIFORNIA'S Blue Shield Plan was a pioneer, born in ferment, reared like Topsy, and only now appears to be reaching a stage of stable maturity. Your Board of Trustees feels that, in this era of maturity, the economic arm of the medical profession in California has an enormous undeveloped potential to further benefit the public and the profession.

To guide our course in the critical years ahead, the House of Delegates of the California Medical Association, the ultimate governing body of C.P.S., must, as never before, be aware of the strengths and weaknesses of your organization as seen by your Board of Trustees. I would like to briefly outline these today.

The foremost area of strength lies in our physician membership. Chart 1 shows the proportion, as of March, 1961, of all practicing physicians in the state who are members of C.P.S. The growth in number of practicing physicians as well as fluctuation in proportion of C.P.S. physician membership, at five-year intervals from 1940 through 1960, are shown in Chart 2.

This membership record seems to us all the more remarkable in light of the fact that a very great number of these physicians were too young to have experienced the flux and political furor which accompanied the establishment of this pioneer Blue Shield Plan. I think one can assume certain things from these facts—one, that medical socioeconomic pressures in 1961 closely resemble those of 1939, and, two, that this voluntary association reflects a sober, unemotional, professional appreciation of the necessity for this particular type of prepayment mechanism in our present and foreseeable economy.

When I say, "this particular type of prepayment mechanism," I refer to service benefits, a type of prepaid health plan for which there is increasing public pressure and demand. In California, C.P.S. is the only statewide mechanism which can meet this demand. Alternatives are either closed panels or arrangements of county societies available only within local areas.

A second great area of strength lies in our flexibility to adapt to change—change in the patterns of medical practice as well as change in the public's need. The voluntary sacrifice of a minor amount of individual economic self-determinism on the part of physician members has provided us with a corporate structure which has been relatively free to engage in pilot plans and other experimentation. With full use of these prerogatives and with physician support, we believe it possible to continue in the development of patterns of prepaid medical care previously considered impossible. The direct benefits to the public thus derived, not to mention the salutary effect on other underwriters of health insurance, cannot be measured in dollars alone.

A third area of strength lies in our subscriber membership as well as their loyalty to C.P.S. Chart 3 shows the fluctuation in patient membership. The first reduction in membership between 1950 and 1955 reflects the after-effects of the statewide split between C.P.S. and Blue Cross. The second dip two-

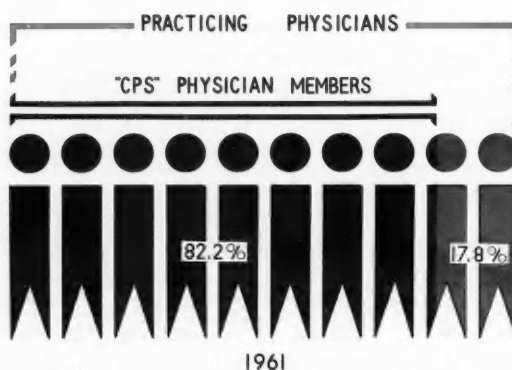


Chart 1.—The proportion, as of March, 1961, of practicing physicians in California who were members of California Physicians' Service.

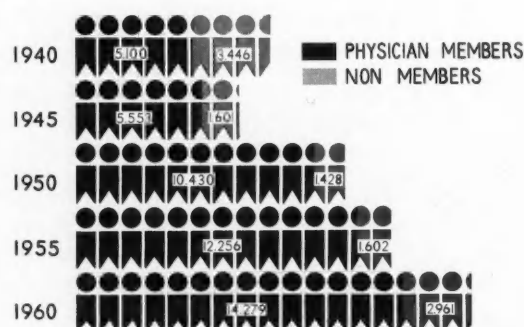


Chart 2.—Fluctuation in number of practicing physicians, as well as proportion of C.P.S. physician membership, at five-year intervals from 1940 through 1960. The reduction in number of practicing physicians in 1945 was due to the war.

thirds of the way between 1955 and 1960 reflects the economic recession of 1958. At the end of 1960, membership in the commercial programs stood at 971,068 persons.

Chart 4 shows the current C.P.S. patient membership structure. Under government contracts, C.P.S. is administering as fiscal agent the Veterans Hometown Care Program, the Medicare Program, and a portion of the Public Assistance Medical Care Program.

As to subscriber loyalty, I should point out that the first two large groups to enroll in C.P.S., the California State Employees and Stacey's, Inc., are still on our books. Many other groups, including the California State Grange, have been with us for many years.

The proportion of California's population that has health coverage of one kind or another is shown in Chart 5, which also shows where this part of the population obtains its prepaid medical care. This chart demonstrates rather dramatically the relatively small (about 6 per cent) proportion of the population covered by C.P.S. in California. What it cannot portray—and I wish it could—is the considerable influence this insured group exerts on the other underwriters in this field, influence evidenced by upgrading of benefits and a more accurate coverage of both the public and the profession's needs in the entire field of prepaid health care.

In any self-appraisal, then, duration of membership, current enrollment and stature in the field must be considered as indices of C.P.S.'s effectiveness and vitality. By all these standards, I can report for your Board of Trustees, we measure up very creditably.

My report of C.P.S. strength would not be complete without further mention of our work with various government agencies. I have already mentioned our role as fiscal agents for the Veteran, Medicare and Public Assistance programs. Chart 6 shows the proportional relationship of payments made under these governmental programs to those in our commercial plans. This chart also depicts the growth between 1955 and 1960 in the volume of medical care provided by C.P.S. to government beneficiaries. It should also be noted that in 1955 the only governmental program administered by C.P.S. was that of the Veterans Administration. Participation in the varied governmental programs that we serve today gives us an opportunity to keep abreast of their thinking and future planning in this field as well as giving us access to valuable actuarial data. Through our provision of these fiscal services, tax dollars have been saved by low administrative cost and avoidance of the need of duplication of equipment and personnel on the part of the government.

CPS PATIENT MEMBERS (IN 000S)

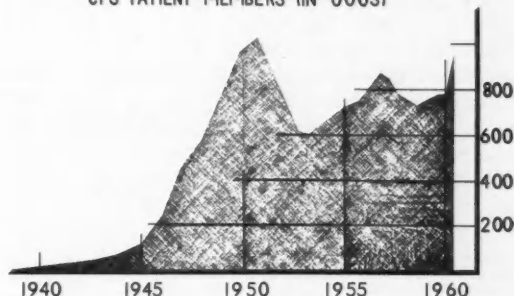


Chart 3.—Fluctuation in C.P.S. patient membership. The first reduction in membership midpoint between 1950 and 1955 reflects the effects of the statewide split between C.P.S. and Blue Cross. The second dip two-thirds of the way between 1955 and 1960 reflects the economic recession of 1958.

CPS MEMBERSHIP STRUCTURE 1961

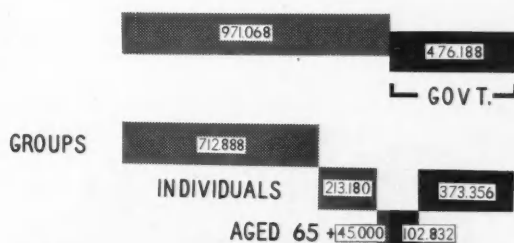


Chart 4.—Current C.P.S. patient membership structure. Under government contracts, C.P.S. is administering as fiscal agent the V.A. Program, the Medicare Program (which provides medical care for the dependents of the Armed Forces) and the Public Assistance Medical Care Program. The C.P.S. coverage of 45,000 in its own programs for those 65 years of age and over include persons still in groups, in extension of coverage by conversion and those individually enrolled.

CALIF. POPULATION WITH SOME HEALTH COVERAGE 1960

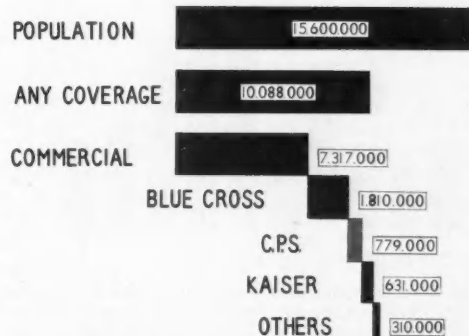


Chart 5.—Showing the proportion of California's population with health coverage of any type. Also shown is where this part of the population obtains its prepaid medical care.

Our final area of strength lies in the administrative "know how" that has developed over the years. Those of us who work closely with the lay administrative staff have the utmost confidence in their ability, their dedication and loyalty to the profession. Reasons for our confidence are evidenced by our strong financial position and the fact that, despite rising labor costs, administrative expense in relation to dues income has steadily decreased. Chart 7 shows a comparison of relative administrative costs between C.P.S. and the ten largest commercial insurance companies. Company A, for example, shows an administrative expense of 15 per cent, Company F shows 36.6 per cent. Incidentally, the volume of medical coverage written in 1960 varies between \$406,601,000 for Company A

C.P.S.
ADMINISTRATIVE EXPENSE AS A PERCENT OF INCOME

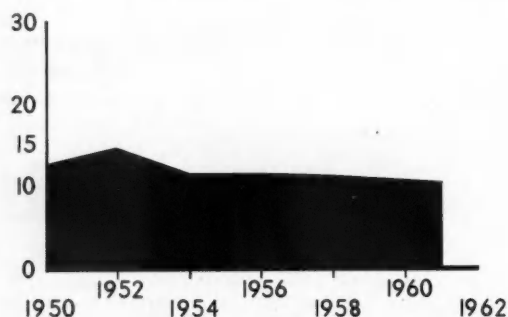


Chart 6.—C.P.S. administrative expense shown as a per cent of C.P.S. income since 1950. The reduction in administrative cost is apparent especially if the peak of 1952 is taken into consideration.

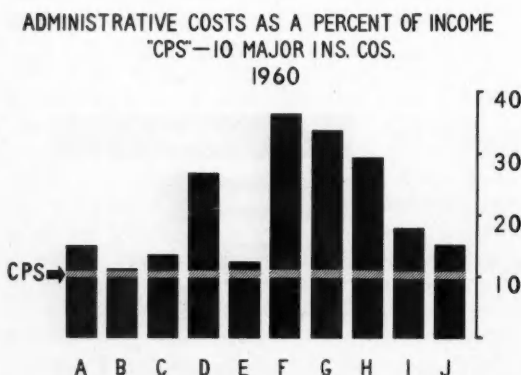


Chart 7.—A comparison of relative administrative costs between C.P.S. and the ten largest commercial health insurance companies. Company "A," for example, shows an administrative expense of 15 per cent. Company "F" shows 36.6 per cent. Incidentally, the volume of medical coverage written in 1960 varies between \$406,601,000 for Company "A" and \$88,195,000 for Company "F" during the calendar year 1960.

and \$88,195,000 for Company F during the calendar year 1960. As you can see, C.P.S.'s administrative expense of about 10 per cent compares favorably, and we are expecting even greater reductions in future years. The importance of this administrative expense ratio is made more dramatic by Chart 8, which shows a comparison of the portion of the income dollar returned to the patient in actual medical care as between C.P.S. and the 12 companies with the largest volume of health insurance in California. For example, of a total of \$133,000,000 in individual hospital and medical premiums paid in this state between 1957 and 1958, slightly less than \$61,000,000 was paid out in actual benefits. This amounts to only 46 cents of the dollar collected. During the same period, C.P.S. returned more than 80 cents on the dollar. Competent administration, then, permits us to expend maximal amounts of the dues dollar for services rendered, which, again, is evidence of our strength.

In summary, then, these are our main strengths: Physician membership, flexibility and freedom to experiment, subscriber loyalty, the ability to deal with government, and administrative "know how."

The weaknesses are less numerous but are critically important. Over the past several years, the absence of realistic and uniform fee schedules and income provisions has been a severe handicap to C.P.S. in enrolling statewide and national groups. The old ratification process was painfully slow, and

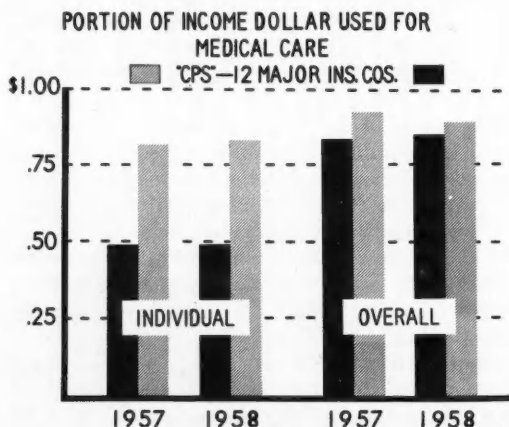


Chart 8.—A comparison of the portion of the income dollar returned to patient membership in actual medical care between C.P.S. and the twelve companies with largest volume of health insurance earned income in California. For example, of a total of \$133,000,000 worth of individual hospital and medical insurance written in California between 1955 and 1958, slightly less than \$61,000,000 (or only 46 cents on the dollar collected) was paid out in actual hospital and medical care benefits. During the same period C.P.S. returned more than 80 cents on the dollar. This slide shows similar comparison for individual policies and the overall of group and individual policies for 1957 and 1958.

not only inhibited C.P.S.'s ability to market effectively, but also delayed the introduction of more adequate fee schedules for professional services.

On studying this matter, the C.M.A.-C.P.S. Liaison Committee, which was formed as a result of action of this House last year, made recommendations to improve the fee schedule situation. With the C.M.A. Council's subsequent authorization to market two new fee schedules (D and E) on a statewide basis, the problem has been significantly improved.

Even so, the fee schedule picture is extremely complex. There are some 15 different fee schedules now in effect around the state—some available statewide, some available in single counties only, and some available in a group of counties. With this degree of fragmentation, many marketing problems still exist, and it is not difficult to visualize the problem which existed only a short time ago when only the lowest schedule was available statewide. These facts have given great comfort and satisfaction not only to C.P.S. competition, but also to backers of governmental schemes.

Another weakness that plagues all prepayment service organizations, including C.P.S., is the problem of educating the public as to the danger of experience rating.

The cost of a given prepaid or insured contract depends, for example, upon the type of underwriter (service or indemnity), the type of contract (group or nongroup), the range of benefits, geographic differences in hospital charges and physicians' fees, and the characteristics of the particular group or individual risk.

In recent years, the last factor, the characteristics of the specific risk, has become particularly important and has spread the practice of differential pricing (or experience rating) that was developed by the insurance industry, a practice that discriminates against the coverage of the marginal risk.

Sociologically, this situation is dynamite, and if the trend toward experience rating cannot be reversed, it is most probable that an explosion will occur which will demand, and in a large measure justify, government intervention. This is abundantly clear to the Blue plans, but they cannot reverse it alone. The insurance industry, the public, and the profession must help, too—and so far they have shown little intent to do so.

At present, C.P.S. is attempting to ride two horses in this regard, by "pooling" or community rating the higher risks (such as Continued Membership, small groups and contracts issued to individuals) and experience rating the highly competitive preferred risk groups. How much longer it can continue this practice is open to conjecture, since in bidding for preferred risk groups no allowance is

CPS PAYMENTS FOR MEDICAL CARE

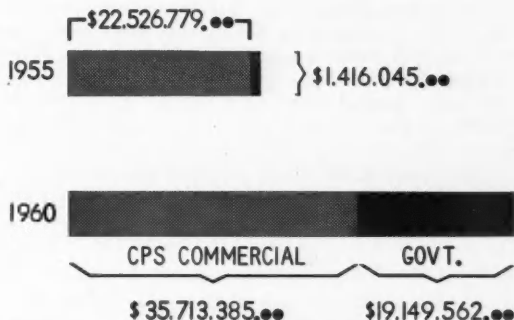


Chart 9.—The growth in volume of medical care provided by C.P.S. in 1955 and 1960. It should be noted here that the only government program administered by C.P.S. in 1955 was the V.A. program, while in 1960 C.P.S. administered the V.A., Medicare and Public Assistance Medical Care.

made by competition for expenses involved in meeting a social responsibility. This weakness—that is, being forced into experience rating—must be combated by intensive education of the public and the profession as to its potential danger. With unified support of the profession, C.P.S. is in a unique position to provide the leadership in this highly sensitive and important area of medical economics in the 60's.

The last and most disturbing weakness I wish to mention is in the area of professional relations, namely, physician support of the profession's creative imagination. We are weak and vulnerable as never before in this particular context. Many give only lip service to Blue Shield philosophy. Some confuse freedom and responsibility with free enterprise and the profit motive. Some apparently have memories of past injustices longer than their vision of accomplishment for the future. Only in our House of Delegates can these issues be faced and decided on their merits, but unity and cooperation on whatever decisions are made by the House were never more obviously necessary.

The problems that will face Medicine and C.P.S. during the decade ahead will be many and varied, just as they have been in the past. Some can be anticipated and planned for. Of these, the principal one is the position of government in the medical care field. What will it be, what will it mean to the medical profession and to voluntary prepayment? An answer may be found in a paragraph from the Somer's study of Private Health Insurance, published by the Institute of Industrial Relations, University of California, Berkeley:

"In the crucial stage of evolution immediately ahead, voluntary health insurance may determine

its own role and, indirectly, the role of government for many years to follow. If voluntary programs can succeed in taking the bold steps which offer some promise for coping with current and increasingly apparent inadequacies, the government role may continue in more or less the same pattern as at present. Otherwise, the growing volume of consumer demand, coupled with the financial crises of hospitals, medical schools, and other branches of medicine will lead to greater government intervention. At the moment, the power of decision still rests to a major extent with the providers of service and the insurance carriers. If they default or fail, the major influence in public policy determination may move into other hands."

The prophetic accuracy of this conservative statement, which was published in 1958 is already apparent in the plans of the present national administration.

If our national economic goal continues to be full employment—and it undoubtedly will—the demand for full service comprehensive benefits will become more and more insistent. A nation obliged to consume the goods and services of full employment will be so involved in the problem of financing pur-

chases that any unexpected expense will upset the family budget. Even today, most families live from pay check to pay check. So it takes no special insights to recognize that full service programs with comprehensive benefits will be in increasing demand, not because of public caprice, but because of very real economic pressures. It can be safely predicted that this demand will be satisfied in one way or another. We should be planning accordingly to offer such programs before we lose the chance.

In this and other areas of future planning, C.P.S. is uniquely prepared with actuarial data to do the research necessary for the development of new programs. But, as an agency of the medical profession, it must have broad and affirmative physician support if it is to market them effectively. By the word "effectively" is meant not only the successful conduct of the initial enrollment, but the maintenance of public satisfaction with a given program at the point of service. To the extent that such satisfaction is maintained, to that extent will Medicine's freedoms remain unchallenged by political proposals. But let us not forget, ever, that the final decision will be the public's.

Tumor Boards in California

The 1961-1962 Approved List

THE COMMISSION ON CANCER of the California Medical Association has actively promoted tumor boards for more than thirty years. Minimum standards and general guides for the operation of tumor boards have been published. The objectives of a tumor board are to offer consultation on cancer diagnostic and therapeutic problems to physicians of the hospital medical staff and the community, and to actively engage in a professional education program, utilizing whenever possible the experiences of the board as the focal point of the program.

The medical director of the commission surveys the tumor boards and presents his findings for action to the Committee on Consultative Tumor Boards, the section of the commission responsible for this phase of cancer control. The following list of tumor boards has been approved by the Commission on Cancer and the Council of the California Medical Association for 1961-1962. Copies of the Minimum Standards may be obtained from the Commission on Cancer, California Medical Association, 693 Sutter Street, San Francisco 2.

The asterisk (*) indicates provisional approval. The tumor boards so listed have not fully met the

standards for lack of time, inadequate case volume or other acceptable reasons, and this designation does not reflect upon the board.

TUMOR BOARDS IN CALIFORNIA

Approved by the Commission on Cancer of the California Medical Association

ALAMEDA COUNTY:

- Berkeley
 - *Herrick Memorial Hospital
- Castro Valley
 - *Eden Hospital
- Oakland
 - Highland-Alameda Hospital
 - Kaiser Foundation Hospital
 - *Peralta Hospital
 - Samuel Merritt Hospital

KERN COUNTY:

- Bakersfield
 - Kern County General Hospital
 - *Mercy Hospital and Nursing Home

BUTTE-GLENN COUNTIES:

- Chico
 - Butte-Glenn Tumor Board

LOS ANGELES COUNTY:

- Burbank
 - St. Joseph Hospital

*Asterisk denotes provisional approval.

LOS ANGELES COUNTY (continued):

Covina
*Inter-Community Hospital
Glendale
*Memorial Hospital of Glendale
Inglewood
Centinela Valley Community Hospital
Long Beach
Long Beach Community Hospital
Los Angeles
California Hospital
Cedars of Lebanon Hospital
*Kaiser Foundation Hospital
Los Angeles County General Hospital
*Mount Sinai Hospital
Presbyterian Hospital—Olmsted Memorial
St. Vincent's Hospital
Temple Hospital
White Memorial Hospital
Lynwood
St. Francis Hospital of Lynwood
Pasadena
*C. P. and H. Huntington Memorial Hospital
St. Luke's Hospital
Pomona
Pomona Valley Community Hospital
Santa Monica
Saint John's Hospital
Torrance
Los Angeles County Harbor General Hospital
Van Nuys
Valley Hospital

MARIN COUNTY:

San Rafael
Marin County Tumor Board
Marin General Hospital
San Rafael Hospital
Ross General Hospital

MERCED COUNTY:

Merced
*Merced County General Hospital

MONTEREY COUNTY:

Carmel
*Peninsula Community Hospital
Salinas
*Monterey County Hospital
*Salinas Valley Memorial Hospital

NAPA COUNTY:

Imola
Napa State Hospital

ORANGE COUNTY:

Newport Beach
Hoag Memorial Hospital—Presbyterian
Orange
Orange County General Hospital

RIVERSIDE COUNTY:

Arlington
General Hospital of Riverside County

SACRAMENTO COUNTY:

Sacramento
Sacramento County Hospital

SAN BERNARDINO COUNTY:

San Bernardino
San Bernardino County Charity Hospital
Upland
San Antonio Community Hospital

SAN DIEGO COUNTY:

La Jolla
Scripps Memorial Hospital
National City
Paradise Valley Sanitarium and Hospital
San Diego
Mercy Hospital

SAN FRANCISCO COUNTY:

San Francisco
Children's Hospital
French Hospital
*Kaiser Foundation Hospital
Mary's Help Hospital
Mount Zion Hospital and Medical Center
Presbyterian Medical Center
St. Francis Memorial Hospital
St. Joseph's Hospital
St. Luke's Hospital
St. Mary's Hospital
*San Francisco General Hospital
University of California Hospitals
Tumor Board
Visible Tumor Board

SAN JOAQUIN COUNTY:

Stockton
*San Joaquin General Hospital

SAN MATEO COUNTY:

Burlingame
*Peninsula Hospital
Redwood City
Sequoia Hospital
San Mateo
Mills Memorial Hospital

SANTA CLARA COUNTY:

Palo Alto
Palo Alto Stanford Hospital Center
San Jose
Santa Clara County Hospital

SONOMA COUNTY:

Santa Rosa
*Sonoma County Hospital

STANISLAUS COUNTY:

Modesto
Stanislaus County Hospital

TULARE COUNTY:

Tulare
Tulare County General Hospital

VENTURA COUNTY:

Ventura
*General Hospital Ventura County

YOLO COUNTY:

Woodland
Woodland Memorial Hospital

Changes Due to the Third Party

THE Physician-Patient Relationship Committee [of the San Francisco Medical Society] spent two years, 1958-1959, studying changes which have occurred in the traditional physician-patient relationship brought about by the introduction of the third party. The public is demanding complete medical protection and care and the role of the third party is becoming increasingly more important.

The method of study included interviews by committee members with hospital administrators and record room librarians of sixteen local hospitals, representatives of seven major medical insurance companies, as well as committees of the San Francisco Medical Society, the California Medical Association and the American Medical Association, which deal with these problems.

An attempt was made to determine current practices relating to this multiple party relationship and to define the problems as seen by these varying groups and to seek ways of overcoming them.

PROBLEMS AND COMPLAINTS

(A) Hospitals:

The hospital administrators and the record room librarians stated that there has been a marked increase in requests for information regarding insured patients in the past ten years. The policy of limiting information to the front sheet is fairly uniform but additional information is requested in about two per cent of the cases or two thousand cases per year in San Francisco. There is a definite relationship between the type of coverage a patient has and the number of requests for additional information that are received. The more restricted the coverage the more requests are received. Hospitals also complain that the patients generally are not fully informed about their coverage and this leads to a good deal of confusion and ill feeling. They blame both the doctor and the insurance company for this.

(B) Insurance Companies:

The insurance companies uniformly feel that they need and have a right to freer access to the patient's chart. They feel that doctors need policing because some doctors overcharge insured patients or extend hospitalization merely because the patient is insured. They also believe that sometimes doctors alter their diagnoses so that they can be covered by the patient's insurance. Insurance companies also believe that physicians do not discipline their colleagues effectively.

Reprinted from *The Bulletin* of the San Francisco Medical Society, May, 1961.

(C) Physicians:

Physicians feel that free access to a patient's chart will undoubtedly disclose information which may be misunderstood by lay personnel and may be injurious to the patient. They realize the right of privileged communication belongs to the patient and not to the doctor, and if the patient waives this right the physician can only comply. Physicians feel that insurance companies are not governed by a tradition or code of ethics which protects the privacy of the patient. Privacy and confidentiality have always been essential conditions of good medical practice. Physicians feel that restrictive types of coverage put an undue burden on them and that they should not be limited in their treatment of patients by the rules of an insurance company.

These varying opinions were discussed at length by the committee and the following recommendations were formulated.

RECOMMENDATIONS

[I] In regard to the form that health insurance coverage takes, the committee has these things to recommend:

1. This study indicates that the type of insurance carried by a given person or group is extremely important as to how much confusion and disagreement there is going to be in determining the rights and responsibilities of various interested parties. Accordingly, the committee recommends that the difficulty be thoroughly studied by present and future purchasers of health insurance.

2. The principles inherent in deductible or co-insurance are largely free of confusing and troublesome aspects. These two types of insurance are more easily administered, and more clearly lend themselves to the satisfactory delineation of the realistic rights and responsibilities of all parties.

3. According to this survey restricted coverage inherently places a serious conflict of interests between all parties involved and these conflicts of interests are basically insoluble.

4. Even though restricted coverage inherently contains an insoluble conflict of interests for the parties involved, so long as it continues to be issued there are some factors which will help to control and reduce the degree of conflict.

- (a) Encourage doctors and/or doctors' office personnel to investigate the nature of the restrictions in the patients' insurance policy before undertaking elective hospital or office treatment. Arrange for a discussion of the facts of these restrictions with the patient, and arrive at a clear mutual understanding.

- (b) Encourage doctors and/or doctors' office personnel to investigate the nature of the insur-

ance restrictions with the patient or patient's family as soon as possible after emergency hospital or office treatment. Hospital administrators have solved most of their problems by getting this information within the first twenty-four hours after hospital admission.

(c) Encourage insurance carriers, unions and employers to engage in a continuous explanation of the restrictions as well as the benefits of the insurance policy.

[II] In regard to the access to medical records and private communication, the committee has these things to recommend:

1. Extended coverage on a deductible or co-insurance basis. This will markedly reduce the need for access to records.

2. Doctors should:

(a) Produce a standardized front sheet data form.

(b) Use standardized diagnostic nomenclature for filling out insurance forms to reduce the need for access to records.

3. Insurance companies should:

(a) Adopt a standardized procedure for processing claims.

(b) Specify exact information desired in requests for supplemental information instead of sending the physician a general history form, to reduce the need for access to records.

4. Doctors should fill out initial forms completely, carefully and promptly, so that the need for access to records will be reduced.

5. Doctors should fully understand the need for additional inquiries by insurance carriers, and respond promptly and accurately to such inquiries so that the need for access to records will be reduced.

However, the committee recognizes that there are grave and just causes which require access to medical records, and the committee recommends in such situations:

1. If possible, have a doctor on the staff of the insurance company review the record with the permission and knowledge of the patient.

2. Consider creating a new profession or specially trained and certified lay personnel as medical record examiners, who would be inculcated with the importance of protecting the privacy of the patient as are medical record librarians. There might be possible

the passage of special regulatory laws as with internal revenue agents.

3. Have questioned claims examined by a special committee of the medical society.

4. Create a special physicians hospital committee to pass on necessary *vs.* unnecessary hospitalization, treatment, etc.

5. Doctors who actually abuse the financial interests of the insurance carriers and/or of the patients be suspended or removed or fined by the medical society, or if these are deemed inadequate, it is recommended that the offending doctors be prosecuted by California law as defined in the California Insurance Code 1957 edition, Section 556 which makes a fraudulent insurance claim punishable by imprisonment up to three years and by fine not exceeding \$1,000 or both.

[III] In regard to the problems of communication and education the committee recommends:

1. The doctors engage in a continuous education program on these matters by papers, seminars, hospital and society programs on the subject.

2. That hospitals and medical schools include instructions and seminars on these problems within their clinical training program.

3. That insurance companies engage in continuous efforts to promote better understanding of their problems and to make their positions understood and accepted by the doctors and the public.

4. That representatives of all groups involved in the problem of health insurance meet regularly with each other to coordinate their mutual efforts and interests, and to inform and educate the public.

[IV] The committee recommends that a letter of commendation be sent to the Bay Area Group Hospital Association for its initiative achievements in establishing policy to control and regulate the dissemination of patients' medical record information. We encourage them to continue and extend their work.

[V] The committee further recommends that the continuing study of "*The Doctor-Patient Relationship and the Third Party*" be undertaken by the Physician-Patient Relationship Committee of the San Francisco Medical Society, and that programming of the above recommendations be instituted by it.

JOHN D. RELFE, *Chairman*

*Physician-Patient Relationship Committee
San Francisco County Medical Society*

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

A grant of \$40,500 has been made to Dr. A. James McAdams, pediatric pathologist of Children's Hospital of the East Bay, Oakland, for a research study on anoxic brain damage. The grant, to cover a two-year period, has been made by the National Institutes of Health of the U. S. Department of Health, Education, and Welfare.

Dr. Florence Char, a cardiophysiologist, will be a co-investigator with Dr. McAdams. Jane Fraenkel-Conrat (Ph.D.), a biochemist, and Dr. Robert Whittlesey, a surgeon, will work with them.

LOS ANGELES

The name of the College of Medical Evangelists, under which that medical education center has operated for 56 years, was officially changed to Loma Linda University, effective July 1. The School of Medicine will continue to be located on two campuses, at least for the present, one at Loma Linda, where the first two years of the course will be given, and the other in Los Angeles. The address of the office of the dean, Dr. W. E. Macpherson, remains 1720 Brooklyn Avenue, Los Angeles 33.

Dr. George Canegeri, Redondo Beach, won the highest award at the 24th Annual Exhibit of the American Physicians Art Association which was held in New York City at the American Medical Association's annual meeting. Dr. Canegeri's entry was a landscape done in oil.

SAN DIEGO

The eleventh annual meeting of the Southwest Obstetrical and Gynecological Society will be held October 29 to 31, 1961, at the Koni Kae Club in San Diego. Further information may be obtained from Dr. Walter M. Ballard, 525 Hawthorn Street, San Diego 1.

SAN FRANCISCO

Raymond L. Hanson, San Francisco attorney, has been elected president of the board of trustees of Presbyterian Medical Center, succeeding John R. Little, who pioneered the development of the Medical Center and has been president of its board since it was created early in 1960.

F. D. Tellwright, executive vice-president of Pacific Telephone & Telegraph Co., and Fred H. Merrill, executive vice-president of Fireman's Fund Insurance Co., were elected vice-presidents, while M. A. Clevenger, executive vice-president of Cannerymen's League of California, was elected secretary and Uno Nordeen, who has just retired as general auditor of Southern Pacific Co., was elected treasurer.

J. Milo Anderson was reappointed executive vice-president of the Medical Center, and W. O. Geigenmuller, assistant vice-president.

Announcement was also made that Dr. L. D. Howard, Jr., had been elected president of the medical staff of the Medical Center, succeeding Dr. Forrest M. Willett who

had served in that position for two years. Dr. Edgar Wayburn was elected vice-president of the staff and Dr. Chester Herrod, secretary-treasurer.

GENERAL

A pre-test of a survey to learn more about the practice characteristics and activities of physicians in California has been under way for several weeks. A 1 per cent sampling is being conducted through a questionnaire by the Bureau of Research and Planning of the California Medical Association.

Following the evaluation of responses from the pre-test, the questionnaire will be revised, where necessary, and then sent to all physicians in the state, regardless of type of practice and status of affiliation with medical societies.

Physicians are requested to cooperate in these surveys by returning the questionnaire as promptly as possible. The data are expected to be particularly helpful to the California Medical Association and its committees in planning future activities and programs.

The American Urological Association is offering its annual award of \$1,000 (first prize of \$500, second prize \$300, and third prize \$200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing clinical or laboratory research work in urology.

Full particulars may be obtained from the executive secretary of the association, Mr. William P. Didusch, 1120 North Charles Street, Baltimore 1, Maryland. Deadline for essays is November 15, 1961.

The Trustees of the Caleb Fiske Prize of the Rhode Island Medical Society have announced two subjects for this year's essay contest, which is open to any doctor of medicine in the nation. The subjects chosen are: "Recent Advances in the Treatment of Malignant Disease," and "Current Status of Cardiac Surgery." A prize of \$500 goes to the winner. Essays should not exceed ten thousand words and they must be submitted by December 11 to: Secretary, Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Obesity and Adolescence. Saturday, 8:30 a.m. to 5:30 p.m., October 21. Eight hours. No fee.

For information on courses for physicians or ancillary personnel contact: Lowell A. Rantz, M.D., associate dean, Stanford University School of Medicine, 300 Pasteur Drive, Palo Alto.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, \$150.00; four weeks, \$250.00.

General Pediatrics. Thursday evenings, September 21 through December 7. Harbor Hospital, Torrance.*†

Basic Science Course in Ophthalmology. Wednesday afternoons, September through April. Fee: \$175.00.

Teaching Clinics. September 21 through December 14, Thursday evenings. UCLA Medical Center, Room 13-105. 24 hours. Fee: \$60.00.

Low Back Pain. Saturday and Sunday, December 2 and 3.*

Peripheral Vascular Disease. Friday and Saturday, December 15 and 16.*

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Obstetrics and Gynecology. Thursday through Saturday, September 14 through 16. Twenty-one hours. Fee: \$40.00.

Internal Medicine—A Selective Review. Monday through Friday, September 18 through 22. Thirty-five hours. Fee: \$20.00 per day or \$90.00 per month.

Neuropsychiatry in General Practice. Thursdays, September 28 through November 2. Napa Hospital. Fee: \$5.00.

A Clinic on Human Disabilities. Friday and Saturday, September 29 and 30. Fourteen hours.*

Evening Lectures in Medicine. Oakland Hospital, Tuesday evenings, October 3 through November 21. Fee: \$35.00.

International Symposium on Bone: Clinical Application of Recent Advances. Saturday through Monday, October 7 through 9. Twenty-one hours. Fee: \$50.00.

Urology. Thursday through Saturday, October 12 through 14. Twenty-one hours. Fee: \$50.00.

Problems Due to Infection in Medicine and Surgery. Saturday and Sunday, October 28 and 29. Franklin Hospital. Fourteen hours. Fee: \$25.00.

Diagnosis in Ophthalmology. Thursday through Saturday, November 2 through 4. Twenty-one hours. Fee: \$60.00.

Problems of Adolescence. Children's Hospital, Saturday, November 4. Seven hours. Fee: \$12.50.

Alcohol and Civilization. Saturday through Monday, November 11 through 13. Twenty-one hours. Fee: \$25.00.

Psychiatry in General Practice. Napa State Hospital, Saturday and Sunday, November 18 and 19. Fourteen hours. Fee: \$25.00.

Hematology. Thursday and Friday, November 30 and December 1. Fourteen hours.*

Surgery of the Hand and Forearm. Friday through Sunday, December 1 through 3. Twenty-one hours. Fee: \$50.00.

External Diseases of the Eye. Thursday through Saturday, December 7 through 9. Twenty-one hours. Fee: \$50.00.

*Fees to be announced.
†Hours to be announced.

Skin Problems in Children. Saturday, January 13, 1962. Children's Hospital. Seven hours.*

Man and Civilization: Control of the Mind, Part II. Saturday through Monday, January 27 through 29. \$25.00.

Dermatology. Friday through Saturday, February 9 and 10. Fourteen hours.*

Child Development. Saturday, March 10. Seven hours. Children's Hospital.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Use of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: \$350.00.

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22. MONTrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Retinal Detachment Course. September 4 through 6. Limited enrollment. Fee: \$100. *Contact:* Secretary, Presbyterian Medical Center Eye Bank, 2018 Webster Street, San Francisco 15.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303 or 414.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

Advanced Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: \$85.00. Physicians may register at any time.

Intensive Review of Internal Medicine. Monday through Friday, September 11 through 22, 8:30 a.m. to 12:30 p.m., Los Angeles County Hospital. Fee: \$65.00.

Bedside Clinics and Set Clinics in Internal Medicine. Thursday evenings, October 5 through January 11, 1962, 7:30 to 9:30 p.m. Los Angeles County Hospital. Fee: \$65.00.

Dermal Pathology. Friday and Saturday, October 20 and 21. Ambassador Hotel. Fee: \$37.50 includes one luncheon and coffee break.

Funduscopy in Internal Medicine. Tuesday evenings, November 7 through November 28, 7 to 9 p.m. Los Angeles County Hospital. Fee: \$37.50. Enrollment limited to 20.

Review of Recent and Practical Problems in Medicine (Homecoming). Thursday and Friday, November 9 and 10, Statler Hotel, Los Angeles.*

Symposium on Anticoagulant Therapy. Friday, November 24. Fee: \$25.00.

Bedside Cardiology. Thursday evenings, February 8 through April 26, 1962, 7:30 to 9:30 p.m. Los Angeles County Hospital.

Refresher Course to be held in Western Europe. Dates to be announced.

Hawaii Course. Summer of 1962.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

LOMA LINDA UNIVERSITY

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: \$350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: \$125.00.
5. **Urology** (can be arranged).

Alumni Postgraduate Convention. March 13 through 15, 1962, Ambassador Hotel, Los Angeles. *Contact:* Kenneth H. Abbott, M.D., general chairman, 316 No. Bailey Ave., Los Angeles 33.

For information contact: Division of Postgraduate Medicine, Loma Linda University, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

Sacramento Valley Counties in Redding, Chico, Marysville, and Auburn in cooperation with University of California San Francisco School of Medicine. Begins week of September 18, 1961.

North Coast Counties in Eureka, Ukiah and Napa in cooperation with Stanford University School of Medicine. Begins week of September 18, 1961.

West Coast Counties in cooperation with Stanford University School of Medicine on Friday, October 20, 1961, at Sister's Hospital, Santa Maria, and on Saturday, October 21, 1961, The General Hospital, San Luis Obispo.

POSTGRADUATE INSTITUTES—1962

Southern Counties in cooperation with University of California Los Angeles School of Medicine. Balboa Bay Club, Balboa. February 8 and 9, 1962. *Chairman:* Bertram L. Tesman, M.D., 1781 West Romney Drive, Anaheim, California.

West Coast Counties in cooperation with University of Southern California School of Medicine, Del Monte Lodge, Pebble Beach. March 8 and 9, 1962. *Chairman:* Joseph E. Turner, M.D., 1073 Cass Street, Monterey.

North Coast Counties, in cooperation with Stanford University School of Medicine. Hoberg's Resort, Lake County, March 29 and 30, 1962. *Chairman:* Lucius L. Button, M.D., 1102 Montgomery Drive, Santa Rosa.

San Joaquin Valley in cooperation with University of California San Francisco School of Medicine. Ahwahnee Hotel, Yosemite. May 3 and 4, 1962. *Chairman:* Samuel Ross, M.D., 2946 Fresno Street, Fresno.

Sacramento Valley Counties in cooperation with Loma Linda University. Lake Tahoe. June 21 and 22, 1962. (Chairman to be announced.)

AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of California Medical Association, offers a subscription series of hour-long tape recordings condensing highlights of important literature and leading national meetings. Designed to be heard in the automobile, home or office. Six different services are offered

—General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, and Anesthesiology. Also, just compiled and released is a Catalog of Classics, offering panel discussions and symposia on specific subjects in all specialties. For information contact Mr. Claron L. Oakley, Editor, 619 So. Westlake Avenue, Los Angeles 57, Hubbard 3-3451.

Medical Dates Bulletin

SUMMER MEETINGS

NEVADA STATE MEDICAL ASSOCIATION 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23 through 26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

PACIFIC DERMATOLOGIC ASSOCIATION Annual Meeting. Hotel Utah, Salt Lake City, Utah, August 30 through September 2. *Contact:* Edward J. Ringrose, M.D., secretary-treasurer, 2828 Telegraph Avenue, Berkeley 5.

SEPTEMBER MEETINGS

NATIONAL KIDNEY DISEASE FOUNDATION, INC. First Kidney Disease Symposium, Ambassador Hotel, Los Angeles, September 13, 9:00 a.m. to 5:00 p.m. Fee: \$12.50 (includes lectures and lunch). *Contact:* Mrs. Jean Gordon, administrative assistant, 1227½ South La Brea, Los Angeles 19.

LOS ANGELES PEDIATRIC SOCIETY Meeting. The use of Amphetamine Tranquilizers and Psychic Energizers in Pediatrics, September 14, 6:30 p.m. Los Angeles County Medical Association Building, 1925 Wilshire Boulevard, Los Angeles. *Contact:* Leslie M. Holve, M.D., secretary, 1015 Gayley, Los Angeles 24.

ST. JOHN'S HOSPITAL Postgraduate Assembly, September 14 through 16. St. John's Hospital, 1328 22nd St., Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

SANTA BARBARA COUNTY HEART ASSOCIATION Sixth Annual Symposium on Cardiovascular Disease. September 16, 9 a.m. to 5 p.m. Santa Barbara Biltmore Hotel. *Contact:* Mrs. Sara Clyde, executive director, 18 La Arcadia Court, Santa Barbara.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Convention. September 17 through 20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

SAN FRANCISCO HEART ASSOCIATION 31st Annual Postgraduate Symposium. September 27 through 29, St. Francis Hotel, San Francisco. *Contact:* Gene Taylor, executive director, 259 Geary Street, San Francisco 2.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting. September 29 through October 1. Hotel del Coronado, Coronado. *Contact:* Philip L. Pillsbury, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

OCTOBER MEETINGS

KAISER FOUNDATION HOSPITALS IN NORTHERN CALIFORNIA Fifth Annual Symposium on Immunology and Autoimmune Disease. October 6 and 7, Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., director of medical education, 280 West MacArthur Blvd., Oakland.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

LOS ANGELES COUNTY HEART ASSOCIATION Professional Symposium. October 11 and 12. 9 a.m. to 5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, program director, 2405 W. 8th St., Los Angeles 57.

SEQUOIA HOSPITAL FOURTH ANNUAL SYMPOSIA, "Man and His Environment." October 14, 8:30 a.m. Sequoia Hospital, Redwood City. *Contact:* Eldon E. Ellis, M.D., program chairman, Sequoia Hospital, Redwood City.

CALIFORNIA ACADEMY OF GENERAL PRACTICE Scientific Assembly. October 15 through 18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

SOUTHWESTERN MEDICAL ASSOCIATION 43rd Annual Meeting, October 19 through 21. Tropicana Hotel, Las Vegas, Nevada. Registration: \$25 (includes 2 roundtable discussion luncheons). *Contact:* Mott, Reid, and McFall, 310 North Stanton Street, El Paso, Texas.

WEST COAST PSYCHOANALYTIC SOCIETIES Meeting, Beverly Hills, October 21 and 22. *Contact:* Executive Secretary, Los Angeles Institute for Psychoanalysis, 344 North Bedford Drive, Beverly Hills.

ST. JUDE HOSPITAL POSTGRADUATE ASSEMBLY, Fullerton, October 22, all day beginning at 8:30 a.m. *Contact:* B. L. Tesman, M.D., St. Jude Hospital, Fullerton.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, INC., October 22 through 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS Fall Meeting, Woodland, Calif., October 25 and 26. *Contact:* Donald G. Davy, M.D., assistant to chief, Division of Community Health Services, Dept. of Public Health, Berkeley 4.

KERN COUNTY GENERAL HOSPITAL Postgraduate Conference and Alumni Day, October 27, 7:30 a.m. to 5:00 p.m. *Contact:* George A. Paulsen, M.D., chairman, Postgraduate Conference Committee, Kern County General Hospital, 1830 Flower Street, Bakersfield.

SAN DIEGO COUNTY HEART ASSOCIATION Eleventh Annual Symposium. San Diego Veterans War Memorial Building, October 27 and 28. *Contact:* O. M. Avison, executive director, 3545 Fourth Avenue, San Diego 3.

NOVEMBER MEETINGS

AMERICAN COLLEGE OF PHYSICIANS Southern California Region 4th Annual Basic Science Lecture Dinner. Statler Hilton, Los Angeles, November 1, 6:30 p.m. *Contact:* George C. Griffith, M.D., governor, Box 25, 1200 North State Street, Los Angeles 33.

SAN DIEGO COUNTY GENERAL HOSPITAL Fifteenth Annual Postgraduate Assembly. November 1 and 2. No registration fee. *Contact:* David E. Wile, M.D., chairman, San Diego County General Hospital, San Diego.

LOS ANGELES PEDIATRIC SOCIETY (of Los Angeles County Medical Association) Annual Brennemann Lecture Series. Ambassador Hotel, Los Angeles, November 8 and 9. *Contact:* Leslie M. Holve, M.D., secretary, 1015 Gayley, Los Angeles 24.

PACIFIC COAST FERTILITY SOCIETY Tenth Annual Meeting, El Mirador Hotel, Palm Springs, November 9 through 12. *Contact:* Gregory Smith, M.D., secretary, 909 Hyde Street, San Francisco 9.

SAN DIEGO CHAPTER, CALIFORNIA ACADEMY OF GENERAL PRACTICE Fifth Annual Meeting. November 9 through 11, Riviera Hotel, Las Vegas. *Contact:* George H. Burkhart, M.D., 514 Third Ave., Chula Vista.

WESTERN SURGICAL ASSOCIATION, November 29 through December 1, St. Francis Hotel, San Francisco. *Contact:* Walter W. Carroll, M.D., secretary, 700 N. Michigan Ave., Chicago 11.

DECEMBER MEETINGS

AMERICAN COLLEGE OF CHEST PHYSICIANS Seventh Annual Postgraduate Course on Diseases of the Chest. December 4 through 8, 9:00 a.m. to 5:00 p.m. daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.

1962 MEETINGS

LOS ANGELES COUNTY HEART ASSOCIATION Sixth Midwinter Professional Symposium, January 10, Statler Hilton Hotel, Los Angeles. *Contact:* Edward Shapiro, M.D., chairman, Professional Symposium Committee, Los Angeles County Heart Association, 2405 W. 8th Street, Los Angeles 57.

AMERICAN COLLEGE OF SURGEONS Sectional Meeting. Statler-Hilton and Biltmore Hotels, Los Angeles, January 29 through February 1. *Contact:* William E. Adams, M.D., secretary, 40 E. Erie Street, Chicago 11.

TUBERCULOSIS AND HEALTH ASSOCIATION OF CALIFORNIA Annual Meeting. El Cortez Hotel, San Diego, February 7 through 10. *Contact:* Mr. Wm. Phraener, coordinator, public relations, 130 Hayes Street, San Francisco.

AMERICAN COLLEGE OF PHYSICIANS ANNUAL SOUTHERN CALIFORNIA Regional Meeting. El Mirador Hotel, Palm Springs, February 16 through 18. Submit abstracts to Walter S. Graf, 3701 Stocker Street, Los Angeles, by Nov. 1, 1961. *Contact:* George C. Griffith, M.D., governor, Box 25, 1200 North State Street, Los Angeles 33.

PACIFIC COAST SURGICAL ASSOCIATION Annual Meeting. Sheraton Hotel, Portland, Oregon, February 18 through 21. *Contact:* Carleton Mathewson, M.D., Presbyterian Medical Center, San Francisco.

SOUTHWESTERN PEDIATRIC SOCIETY Spring Lecture Series. Evening of March 6 and all day March 7, Statler Hotel, Los Angeles. *Contact:* R. W. Watson, 504 So. Sierra Madre Boulevard, Pasadena.

ANESTHESIA SECTION OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION Seventh Annual Spring Postgraduate Meeting. Statler Hilton, Los Angeles, March 10 and 11. *Contact:* Thomas W. McIntosh, M.D., 686 East Union Street, Pasadena.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION, INC., Biltmore Hotel, Los Angeles, March 21 through 24. *Contact:* Dr. Marion F. Langer, 1790 Broadway, New York 19.

INTERNATIONAL COLLEGE OF APPLIED NUTRITION Annual Convention. Huntington-Sheraton Hotel, Pasadena, March 22 and 23. *Contact:* Donald C. Collins, M.D., secretary, Suite 503, 7046 Hollywood Blvd., Hollywood 28.

AMERICAN ACADEMY OF GENERAL PRACTICE. Las Vegas, Nevada. April 6 through 13. *Contact:* Mr. Mac F. Cahal, executive director, Volker Blvd. at Brookside, Kansas City 12, Mo.

CALIFORNIA MEDICAL ASSOCIATION Annual Session. San Francisco. April 15 through 18, 1962.



THE PHYSICIAN'S *Bookshelf*

ATLAS OF OBSTETRIC TECHNIC—Deluxe Edition—J. Robert Willson, M.D., M.S., Professor of Obstetrics and Gynecology, Temple University School of Medicine, Philadelphia, Pa., Head of the Department of Obstetrics and Gynecology, Temple University Hospital, Philadelphia, Pa., 1961. 304 pages, \$14.50. (Also available in a Regular Edition at \$12.50.)

In 1943 the late Paul Titus was the author of an obstetric atlas that was sufficiently popular to warrant a second edition in 1949. The present atlas bears at least a superficial resemblance to Titus's volume and is the work of the same publisher, but in all other respects it is an entirely new venture designed to display a set of original drawings by Daisy Stillwell. The procedures illustrated are those in current use by Willson and his associates at the Temple University Medical Center in Philadelphia. While the drawings for the most part are excellent and informative, some of them are poorly arranged on the plates so that there is much wasted space on the page. Many appear not to have been planned specifically for the space available, and this lends a rather distressing unevenness to the pictorial composition.

A large section is devoted to normal labor, including management of the third stage. The largest segment of the book, as one would expect, deals with forceps operations, but there are sizable chapters on breech delivery, cesarean section, and transverse presentations. The maneuvers shown on each plate are described briefly on the facing pages, and some of the sections have a few introductory pages of text on such matters, for example, as delivery room facilities, analgesia, indications for forceps, and other topics not requiring illustration.

This atlas, according to a statement in its preface, was prepared to aid particularly the resident in training and the general practitioner confronted with a mechanical problem of labor or delivery. For them, as well as for many obstetric specialists, it can be warmly recommended as an adjunct to the standard textbooks.

C. E. McLENNAN, M.D.

DIRECT ANALYSIS AND SCHIZOPHRENIA—Clinical Observations and Evaluations—O. Spurgeon English, M.D., Professor and Head, Dept. of Psychiatry; Warren W. Hampe, Jr., M.D., Associate in Psychiatry; Catherine L. Bacon, M.D., Clinical Professor of Psychiatry; and Calvin F. Settlege, M.D., Associate Professor of Psychiatry—all of Temple University Medical Center. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1961. 128 pages, \$4.25.

"Direct analysis is the name given to a psychotherapeutic treatment of schizophrenia. The name was suggested years ago by a colleague of John M. Rosen, M.D., for the particular psychotherapeutic technique used by him."

This begins the introduction to this book. The authors are four physicians who were observers of the treatment of schizophrenic patients with direct analysis by Dr. Rosen at the Temple University Medical Center. The book consists of four papers, one written by each of the authors.

The initial paper by Dr. English is the broadest of the four, since it gives some general description of the treatment technique and describes various psychodynamic elements of it.

Dr. Hampe's paper attempts to correlate the treatment method with his own hypothesis concerning the psychic structure of the schizophrenic.

Dr. Bacon's paper deals with those aspects of Rosen's treatment methods which are related to the identity problems of schizophrenic patients. It attempts to integrate Dr. Rosen's methods with Dr. Bacon's concept of the dynamics of schizophrenic illness.

Dr. Settlege's paper includes verbatim reports of two consecutive interviews with one patient by Dr. Rosen, and comments on these interviews and the techniques used by Dr. Rosen, as Dr. Settlege perceived them.

This review does not properly concern itself with Dr. Rosen or his treatment. Suffice it to say that his approach and techniques are dramatic, provocative and controversial. The four authors of the book differ in some ways as to what they believe Dr. Rosen is doing. They point out that his success, to the extent to which he is successful, may not be due to what he says he is doing, but to unplanned aspects of his impact on the patient. Similarly, it may be pertinent for the reviewer to point out to readers of the book that the author's hypotheses as to what Dr. Rosen is doing may be equally inexact. They, as well as he, may be interpreting what happens in the light of their personal hypotheses about patients and the schizophrenic illness. With this caution made explicit, the book can be recommended to psychiatrists and physicians with an interest in psychiatry (and particularly schizophrenic illness) who may be curious as to what Dr. Rosen's direct analysis consists of and how other psychiatrists may see it.

D. A. SCHWARTZ, M.D.

HANDBOOK OF PEDIATRICS—Fourth Edition—Henry K. Silver, M.D., Professor of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; C. Henry Kempe, M.D., Professor of Pediatrics and Head, Department of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; and Henry B. Bruyn, M.D., Associate Professor of Pediatrics and Medicine, University of California School of Medicine, San Francisco, California. Lange Medical Publications, Los Altos, California, 1961. 574 pages, \$3.50.

The appearance of the fourth edition of the Handbook of Pediatrics in the space of six years attests to its popularity. A French edition has just been published and Spanish, Japanese and Greek editions are in preparation. This concise book which fits the pocket, like others in the series, is especially popular with medical students and members of hospital house staffs to whom it serves as an up to date and ready reference on pediatric diagnosis and treatment. It is intended to supplement, rather than replace, more complete pediatric texts and the over-simplification and dogmatism it occasionally displays is intentional and inherent in this type of publication.